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OCTOBER 25, 1926

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READERS of FIRE ENGINEERING will be interested to know that the influence of this little magazine is felt among fire protection officials in countries all over the map.

¶ Not only North and South America but Europe, Asia and far away Australia are all represented. A mere list of some of the points we touch reads like a Cook's "Around the World" Tour:

¶ England, Scotland, Ireland, France, Switzerland, Belgium, Holland, Norway, Sweden, Germany, Czechoslovakia, Hungary, Italy, Russia, Japan, China, India, Australia, New Zealand, and back by way of Columbia, South America and the Panama Canal.

¶ Some trip, wot? And all the way among friends! We would like to hear from you, all those who care to write a word of greeting. Our columns are open to you, at all times—don't be bashful!

The Publishers

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C. A. M.

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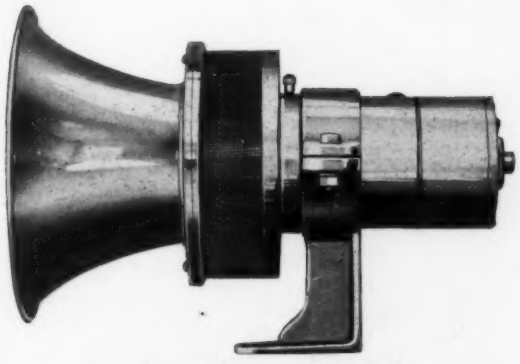

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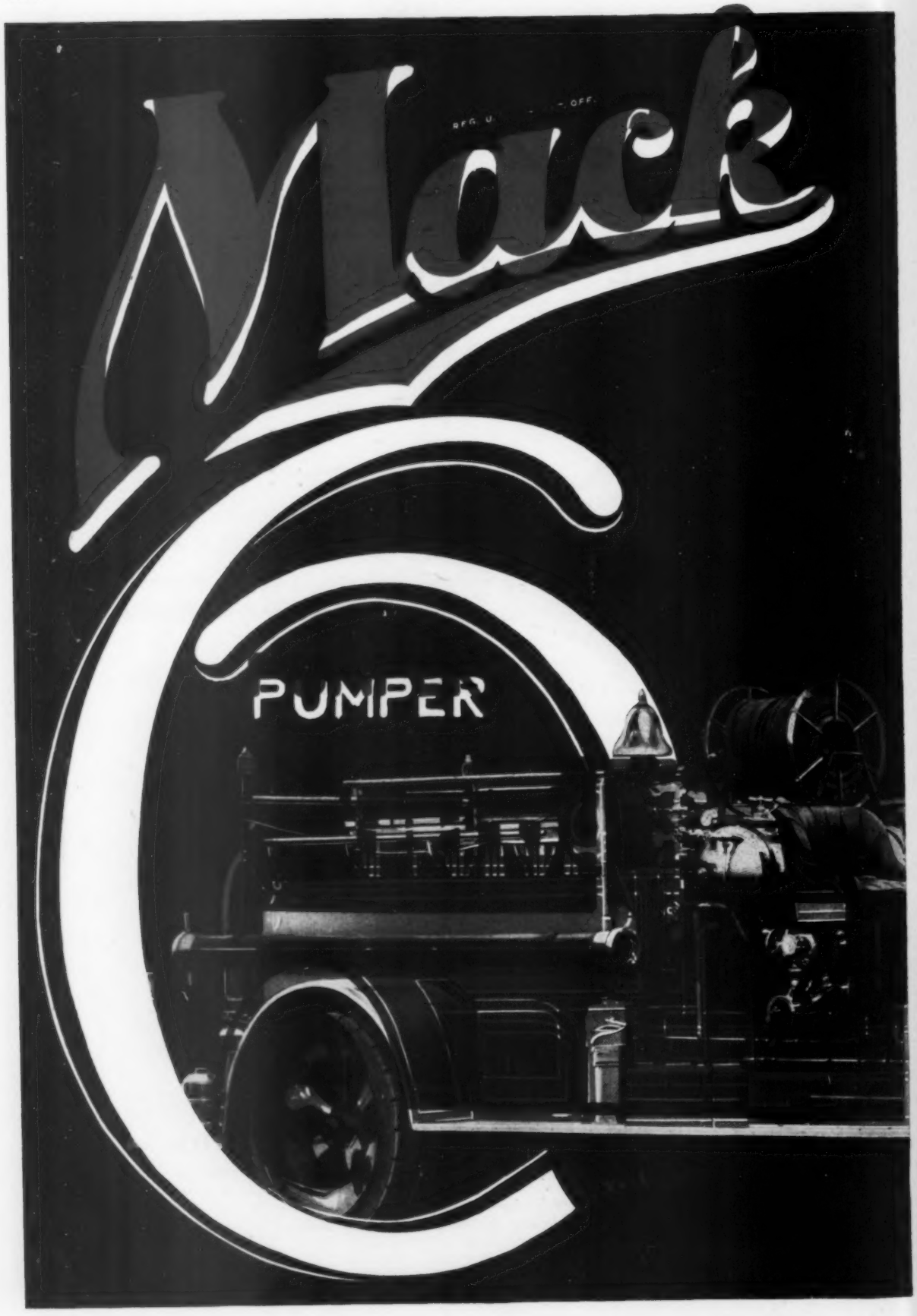
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2nd Test: Duration 3 hours, 537 gallons per minute at 208 lbs. net pump pressure.

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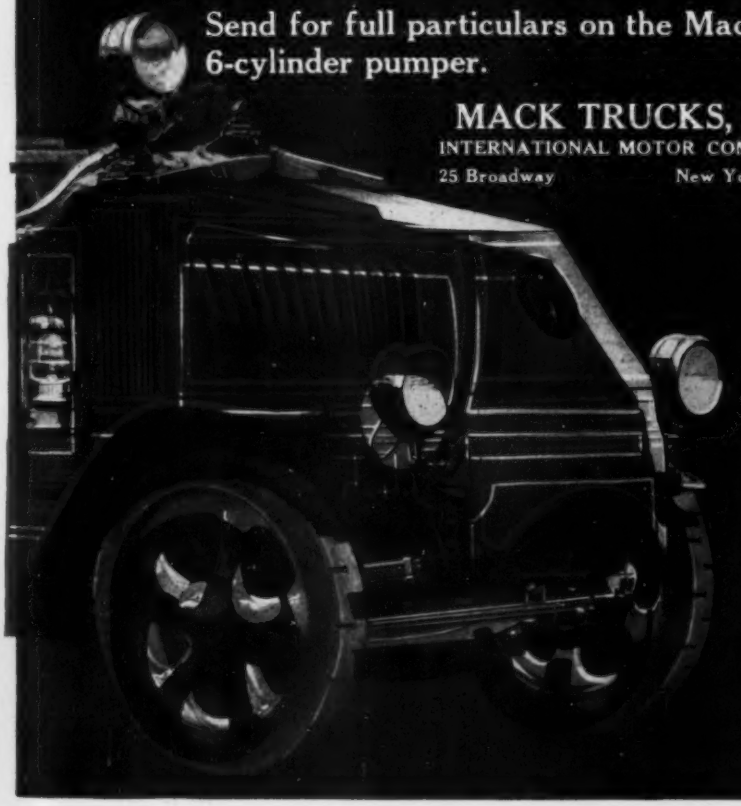

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Such a condition would be impossible if American-LaFrance Fire Apparatus did not perform dependably every time it is called upon for duty.

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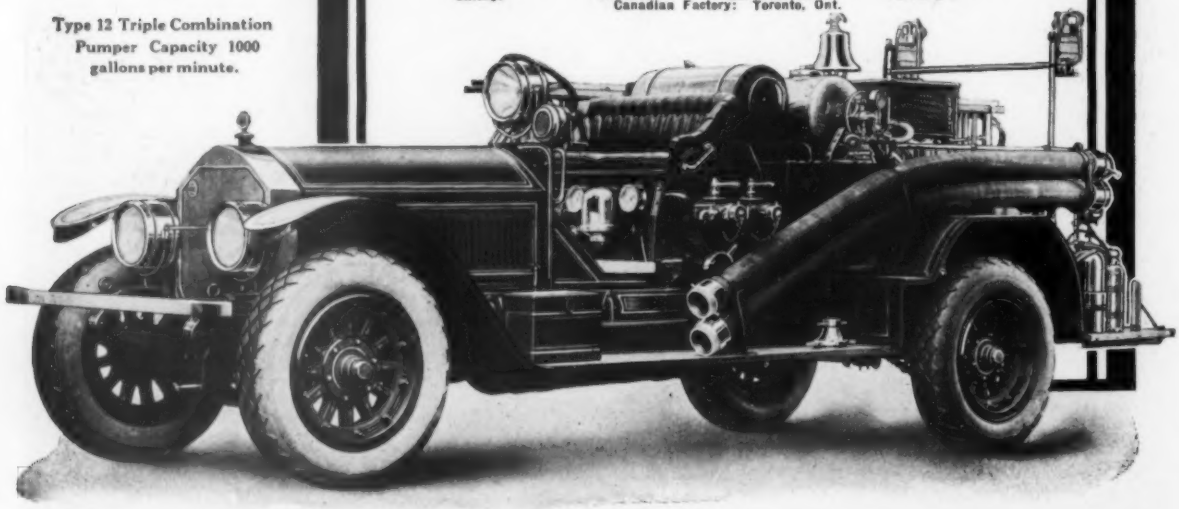

Type 12 Triple Combination Pumper Capacity 1000 gallons per minute.

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What we
Have to
Say—

then—

Listen to
What others
Have to
Say—

then—

Do Your Own Thinking

WHEN you buy fire hose it isn't enough to know what the materials are. You have to know more if you want to buy efficiently and avoid the necessity of frequent repeat orders.

Here are the things you ought to know—

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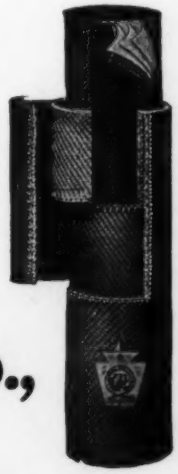

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Chief Boyd *says*

*"I heartily recommend "**Shuredry**" tarpaulins to every fire chief in this country. They are waterproof, not affected by the weather, easy to handle, and altogether the most satisfactory covers we have ever used."*

Supt. Townsend *says*

"These covers (Shuredry) must be of same specifications as the ones I received from you last year. Those covers have been put thru every kind of a test possible in this business and I have found them very satisfactory."

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"Shuredry" Salvage Covers are much lighter than rubber, cost far less, are waterproof, do not crack where folded, making them ideal for salvage work.

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FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX OCTOBER 25, 1926 NUMBER 20

Distinctive Design for Fire Alarm Headquarters

Handsome Fire-Proof Brick Building Isolated in Worcester, Mass., Park—Model Bungalow Fire Station Also Just Completed

By HARRY BELKNAP, Boston, Mass.

DISTINCTIVE designs for isolated fire alarm headquarters are rare and the new house for Worcester, Mass., described in this article, should provide some excellent hints for other departments. It is notable that the new bungalow station for this same city, also described, is built from a design published in the pages of FIRE ENGINEERING:

Chief C. L. McCarthy, Worcester, Mass.

The city of Worcester, Mass., will soon dedicate a new fire alarm headquarters that represents the most modern ideas in building construction and equipment and which is situated on Park Avenue at the foot of Newton Hill in Elm Park where it is isolated and hence absolutely free from exposure hazard.

English style of architecture has been used with pleasing effect and the two and a half story brick structure presents a neat and handsome appearance. It has been built at a cost of approximately a quarter of a million dollars. Lucius W. Briggs was the architect and Clarence T. Rocheford the builder. Work was started in the spring of 1925 and the building was finished this fall. Red brick has been used with trim of Indiana limestone. The roof is of Pyrobar slate.

Arrangement of the Two Floors

The first floor contains a garage for cars of the fire alarm division, machine shop, stock room, and a furnace in the rear basement. The garage section is cut off from the rest of the building, the only communication being through a firedoor leading to the outside vestibule. The stock room in the rear of the first floor is separated from the garage and fire-doors of the fusible link, automatic closing type are provided. Above the garage ceiling there is reinforced concrete seven inches in thickness.

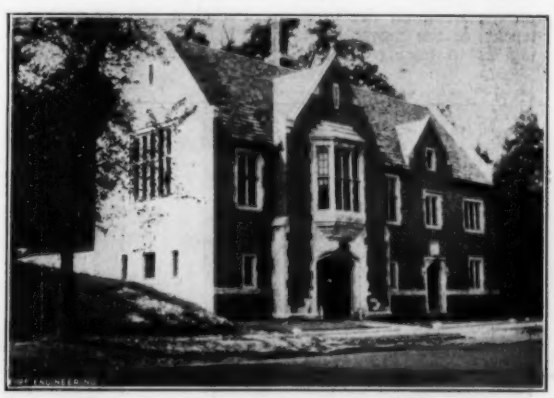
The second floor contains the operating room, battery room, motor room, dormitory, wash-room and toilet, and office of Morey F. Orrell, Superintendent of Fire Alarms, of the Worcester Fire Department. The area of the building is 76 feet by 45 feet and the operating room is 45 feet by 31 feet.

The fire alarm equipment was all furnished and installed by the Gamewell Company, of Newton Upper Falls, Mass. The work of connecting wires and the installation of the apparatus have been done under the supervision of Edward Penkethman, of the Gamewell force.

The Fire Alarm Equipment

The operating room is most attractive and unusually well lighted. The switchboards are of blue Vermont marble which presents a neat and handsome appearance that is remarkably effective. The concrete floor will be covered with battleship linoleum laid on felt. Illumination is provided by seven 200 Watt drop lights on separate switches.

The fire alarm equipment consists of the following instruments: Two Peirce transmitters, two motor gener-



Photos by H. Belknap.

New Fire Alarm Headquarters for Worcester, Mass.

ator sets, one 4 cylinder Sturtevant gasoline engine for generator set. This engine, designed for emergency use in case of failure of the regular power supply which is obtained from the Worcester Electric Light Company, is a Sturtevant type 4 N with 3¼-in. bore and 5-in. stroke and operates at 900 revolutions per minute. A 50

(*Continued on page* 1103)

Chiefs Have Lively Convention at New Orleans

Something Doing Every Minute at Fifty-Fourth Annual Meeting of International Association of Fire Engineers—Traffic Problem Develops Much Discussion

THE fifty-fourth annual convention of the International Association of Fire Engineers, held at New Orleans, October 19 to 21 was marked by the unusual interest shown in every part of the program by those present. Activities in connection with the motion picture sponsored by the Association, "The Fire Brigade" held attention for a large part of the convention period, while changes in the constitution, designed to increase the efficiency of the association were warmly discussed.

The Convention Opens

The convention was called to order by President James Armstrong on Tuesday morning, at 10:30 a. m. Before taking up the work on the program, President Armstrong called attention of the convention to the action taken at last year's meeting as to having on display at each meeting flags of those nations represented in the membership of the organization. In line with this plan, and as a token of appreciation of the excellent cooperation received from other officers of the association, President Armstrong presented the association with a large American flag. At the time of this presentation, the president also turned over to the association a Canadian flag which the Ladies Auxiliary of the Dominion Association of Fire Chiefs donated as a mark of appreciation for the election of the first Canadian born president of the International Association of Fire Engineers.

Two of the Fire Chiefs Responsible for the Success of the Convention

Chief W. F. Daley, Brockton, Mass., the hard working chairman of the exhibit committee. Congratulations Chief Daley on the way you handled your job!

Chief John M. Evans, convention host and newly elected 2nd vice-president of the I. A. F. C.

Address of Welcome

The address of welcome was delivered by Mayor Arthur O'Keefe, who, in order to insure the freedom of the city to the visiting chiefs, not only presented the keys of the city to President Armstrong, but also the "lock and everything" as well. In his remarks the Mayor paid high tribute to Chief Evans and his department.

Percy Ogden, assistant to the state attorney general of Louisiana, also extended to the visitors a welcome, as representative of the Governor, who was unable to be present.

Response to the addresses of welcome was made by Chief Selden R. Allen, of Brookline, Mass., who, in a short but excellent talk expressed the appreciation of the association for the cordial welcome extended.

Memorial Services

Memorial services were held in a theatre just across from the meeting hall, and were presided over by the President.

The Honorable T. O'Connor delivered the memorial address. Those who have passed away since the last meeting include the following:

HONOR ROLL, 1925—1926

Active Members

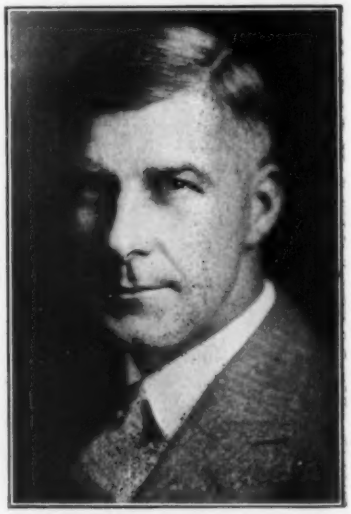
Chief W. L. Gilbert, Newman, Ga., died Feb. 6, 1926.
Chief L. F. Hicks, Raleigh, N. C., died May 7, 1926.
M. W. Jordan, Supt. Salvage Crp., Baltimore, Md., died Sept. 25, 1926.
Chief W. A. Breitheute, Harrisonburg, Va.
R. L. Bettes, Crisco, Texas.
William Crerar, Marion, Ind.

Honorary Members

Ex-Chief Otto Utz, Niagara Falls, N. Y., died Dec. 6, 1925.
Ex-Chief Chas. Vohardt, Freedom, Pa., died May 7, 1926.
Ex-Chief E. P. Murphy, Buffalo, N. Y., died July 2, 1926.
Ex-Chief Fred Williams, Montclair, N. J.
Ex-Chief John Stagg, Paterson, N. J.
Ex-Chief George Frederick, Vincennes, Ind.

Chief Thomas R. Murphy, President, San Francisco, Cal.

Chief Ross B. Davis, First Vice-President, Philadelphia, Pa.



Jay W. Stevens, Newly Appointed Executive Secretary and Technical Advisor on "The Fire Brigade."

Chief James Armstrong, retiring pres. of I. A. F. C. | Deputy Chief Timlin, New Orleans who worked untiringly to make convention a big success. | Chief Louis Behrens, Charleston, S. C. | Charles R. Wood, R. D. Wood & Co. | G. E. Bradbrooke, Braxmar Co. | Chief C. L. McCarthy, Worcester, Mass.

They Look as Though They Are Having a Good Time

Deputy Chief O'Connor, Drillmaster F. D., Washington, D. C. | Wm. F. Richert, Everson-Ross Co.; Fred Bensen, Eureka Fire Hose Co. | Harry Belknap, Correspondent, FIRE ENGINEERING | Abe Brown, Foamite-Childs Co. | John P. Ahrens, Vice-President, Ahrens-Fox Fire Engine Co.

Oh, Yes—Not a Dull Moment During Their Stay

Chief B. Houston, Cincinnati, Ohio, and Chief A. Montmeny, Chicopee, Mass. | Chief Fitzgerald, Naugatuck, Conn., and Chief Daniel F. Johnson, Bridgeport, Conn. | Chiefs Arthur J. Springer, Lacoma, N. H.; Peter B. Carter, Camden, N. J., and Harry J. Francis, New Brunswick, N. J.

Some of the Many Chiefs at the Convention

Chief H. R. McMillan, Jacksonville, Fla., and F. W. Knoeppel, Jacksonville, Fla. | Chiefs Wm. J. Lutz, Wilmington, Del.; J. M. Evans, New Orleans, and J. J. Barnett, Atlantic City, N. J. | Chiefs W. J. Dunn, Plainfield, N. J., and John J. Towey, Newark, N. J. | Chief J. W. O'Hearn, Watertown, Mass. Secretary New England Fire Chiefs Association.

Just a Few of the Many at the I. A. F. C. Convention

Chief D. A. Brosnan, Albany, Ga., Fire Department | Chief Sam Boyd, Knoxville, Tenn., Ex-President I. A. F. C. | "The Three Musketeers" Bob Hazard and Stewart of Am.-LaFrance, and George Morley of Gamewell | Thos. R. Johnstone, of the Magirus Fire Appliance Company | Chief John H. Monroe, of Savannah, Ga. | Chief and Mrs. R. A. Foster, of the Norfolk, Va., Navy Yard

Some Well Known Figures at the I. A. F. C. Convention.

Ex-Chief John K. Hunter, Allegany, Pa.
Ex-Chief Thomas E. Campbell, Carbondale, Pa.
Ex-Chief W. H. Bywater, Salt Lake City, Utah.
Ex-Chief Charles Little, Rochester, N. Y.

Associate Members

Capt. Henry Lakestream, Fire Dept., N. Y. City.

Honorary Life Members

Paul M. Herzog, New York, N. Y.
John G. Hilliard, New York City, N. Y.

The Traffic Problem

The second topic on the morning's program was by Chief John Kenlon of the New York Fire Department. He pointed out that although the advent of the automobile fire truck speeded up a fire department work it directly resulted in the slowing up of fire department operations through congestion of streets. Chief Kenlon made it clear that he had no panacea—no absolute remedy for the situation, but stated that he was here to cooperate with the chiefs in developing a solution to the problem.

As there are 580,000 cars registered in New York City the traffic congestion can well be appreciated. He urged that a free and open discussion be made by the delegates present.

Chief Kenlon said that there were two underlying principles to be considered, as follows:

1. The need for notifying the public that fire apparatus is approaching.

2. Need of traffic regulation so that departments will not suffer from traffic obstruction.

Any solution, he pointed out, must coordinate the efforts of the police and fire departments.

At Chief Kenlon's request, Chief John C. Moran of Hartford, Conn., outlined the system in use in that city. It is briefly as follows: Electric sirens are placed at all street intersections, these sirens being connected by switches located in fire headquarters. Upon the receipt of an alarm a card for the particular box pulled is taken, this card showing the switches to be operated to control the sirens located along the path to be followed by the fire trucks. Switches are then closed so that the sirens along the route are sounded, thus clearing a path for the responding apparatus.

Chief Coop, of Pasadena, Calif., suggested that the chief trouble is frequently with congestion of vehicles at fires rather than enroute thereto.

Education of the public was the suggestion of Chief McMillan, of Orange, N. J., for solving the problem. Unless methods of warning traffic in all sections of the country were uniform, Chief McMillan believed that no system would be fully effective. He cited one instance where a visiting automobile party stopped right at a street crossing, curious to know what the noise from a street corner traffic siren was all about.

Mr. Tighe, of the Boston Globe, seconded Chief McMillan's suggestion. "In Boston," said Mr. Tighe, "there are a great number of streets in the congested value section of the city where the width of the streets is less than 25 feet. When a traffic siren sounds the automobiles line up on the street in two lines and there is not sufficient room left to permit a truck to turn a corner into the street."

Chief Monroe, of Savannah, Ga., told of the plan in operation in his city where he has two cross-streets in the city restricted as to parking. No parking being permitted on these streets, there are always these two arteries available for the travel of the apparatus.

At Utica, N. Y., Chief Sullivan has in operation a system of signals which are set for automatic operation for a two-minute period. When an alarm sounds, the street sirens in the district in which the apparatus is responding start operating and continue to sound for a period of two minutes, at the end of which time they automatically stop. This period gives sufficient time for apparatus to reach the fire. During the two-minute interval, all traffic in the district must remain at a standstill.

Chief Myers, of Dallas, Tex., has a system in use which employs colored lights, while Chief Healy, of Denver, favors red signal lights alone with plenty of traffic officers.

Traffic Regulation

Many suggestions were made in regard to methods of providing proper traffic regulation to speed up response to alarms and facilitate operations at fires. Chief O'Hearn, of Watertown, Mass., felt that it was not good practice to employ sirens for clearing traffic, particularly on first alarm assignments, for it called attention of the public to the fire and often did more harm than good by attracting autoists to the scene in great numbers. A law is now in force in Massachusetts making it a misdemeanor for automobiles to approach within 360 feet of a fire truck which is responding to an alarm, or to approach within 600 feet of apparatus at a fire, or within fire lines established at a fire. It is also a misdemeanor to cross fire hose with a vehicle.

In summing up the discussion, Chief Kenlon stated that he did not expect a solution of the problem at this convention, but made a motion that a committee of three be appointed from the membership of the association and that the Police Chiefs Association be requested to designate a committee from its membership of the same number, these two committees to work together toward the solution of the problem. With an amendment made by President Armstrong, to the effect that the expenses of the police chiefs committee in attending the joint meeting be paid by the International Association of Fire Chiefs, the motion carried unanimously.

Fire Prevention in Motion Picture Industry

The final paper of the session was that presented by Hickman Price, of the Producers and Distributors of America, on Improvements in the Methods of Storage and Prevention of Fire in Motion Picture Films. "While carelessness is a very important factor in fire losses in the motion picture industry," said Mr. Price, "false economy was really responsible for the greatest loss." Structural design also was cited as being responsible for fire damage. There are 25,000 miles of film being handled daily with practically no fire loss.

Other Business

Following the final topic, reports of the Secretary, Treasurer and Auditor were received and accepted; as was also the report of the President.

Resuscitation Discussed at Afternoon Session

The first topic on the program in the Tuesday afternoon session was a paper by Capt. Edward Steidle, of the Carnegie

(*Continued on page* 1106)

Members of the Pacific Coast Association of Fire Chiefs Assembled at Fresno, Cal., for Their 33rd Annual Convention.

PACIFIC COAST FIRE CHIEFS DISCUSS MANY IMPORTANT TOPICS

First Aid, Garbage Collection, Hydraulics, Volunteers, and Other Subjects Treated—Secretary Stevens Given Check

RESOLUTIONS calling for the elimination of fire trap places of public assembly, such as tent shows and other temporary assembly places; the compulsory installation of fire escapes on all hospitals; the endorsement of the campaign of the Pacific Coast Building Officials Conference for a uniform building code for Pacific Coast states; an endorsement of the picture "The Fire Brigade" and complimenting Commissioner Frank L. Colbourn of Oakland, California, for the assistance rendered the Chiefs marked the closing session of the 33rd annual convention of the Pacific Coast Association of Fire Chiefs at Fresno, California, October 12 to 15th.

Chief Geo. M. Mantor. Seattle, New President, Pacific Coast Chiefs.

George M. Mantor of Seattle was elected president for the coming year with Mark Ryan of Redwood City as first vice-president and Chief Tom Graham of Corvallis, Oregon, as second vice-president. Jay W. Stevens was again elected secretary by acclamation and the position of assistant secretary was created to assist him in the increasing volume of work. G. Sydney Rose of Berkeley, California, was elected to fill this position. Veteran Joe Wood of Renton, Washington, was again elected to act as treasurer, an office he has held for many years past.

Retiring President Samuel H. Short of Oakland was presented with a handsome traveling bag and Chief Thos. R. Baird of Fresno, the host chief, and his wife were presented with a beautiful high powered radio receiving set in appreciation of the hospitality and success of the meeting.

Fresno was declared permanent possessor of the Thomas H. Ince Fire Prevention Trophy for cities of less than 50,000 population for winning the cup three consecutive years. Sacramento won the large cup for cities of more than 100,000 population and Bend, Oregon, Chief Tom Carlon, won the third cup for cities of less than 15,000 population for the second consecutive year.

Secretary Stevens Presented with Check

Secretary Jay W. Stevens, whose intensive work in behalf of the fire chiefs of the nation has caused him to be on the road more than half the year with only 11 nights at his home in all that time, was presented with a check for $1,200 with the admonition that it must be spent on an ocean voyage for the sake of his health. Chief Stevens announced that he would arrange to take several weeks vacation as soon as he returns from the International Convention at New Orleans where the picture, "The Fire Brigade" will be shown and formally presented to the chiefs.

The meeting of the Coast Association was again marked by an intensive business program which lasted throughout the days and the evenings. The only day "off" was on Thursday when the delegates to the number of more than five hundred were taken on a sixty-four mile drive into the General Grant National Park in the Sierra Nevada mountains to view the great trees. This diversion was presented to the convention by the Tulare County Firemen's Association.

The Convention Opens

The meeting was opened promptly Tuesday morning, October 12 with invocation and singing of America. Mayor Al E. Sunderland of Fresno welcomed the delegates and praised the work of the association with which he has had close contact for several years past. Chief E. F. Coop of Pasadena responded.

The President's Address

Chief Sam H. Short, presiding then read briefly a message to the Convention in which he spoke of the great work the association—which no longer composed of "a few chiefs thirsting for knowledge and companionship", but has become a powerful organization—has done for the chiefs and the community. It has, he said, grown in numbers and influence, and is now recognized as an important factor in community welfare. He also stressed the work the association has done in furthering the work on the motion picture, "The Fire Brigade."

The Civic Luncheon

The civic luncheon, held under the auspices of the United Service clubs of Fresno, which includes Kiwanis, Rotary, Lions, Exchange, Optimists and others, brought out a crowd of more than 1,200. At the head table sat Governor C. C. Young of California, Justice W. H. Langdon of the California Supreme Court, Mayor A. E. Sunderland of Fresno who acted as chairman, Mayor Sol P. Elias of Modesto, Commissioners Colbourn of Oakland, T. T. Burton of Salt Lake City, Utah, Werden and Frankenstein of Los Angeles, Berg of Berkeley. In the audience, it was found, were twenty other mayors and commissioners who quietly kept themselves in the background.

Governor Young spoke of the tremendous fire waste and said that urged by such gatherings and leadership the chiefs were "doing inestimable good." Judge Langdon also spoke on the cooperation of public officials and fire departments and Mayor Sol P. Elias who has won, in company with his fellow Mayor, A. E. Sunderland of Fresno, considerable fame on the coast for his support of the fire department, spoke eloquently on the part the chief plays in the general routine of a happy and prosperous community. Chief J. J. Healy, of Denver, past president of the International Association was introduced and spoke briefly.

Address by Frank L. Colbourn

At the afternoon session Commissioner Frank L. Colbourn made an address on the "Functions of a Fire Commissioner" which met with such a popular response that it was unanimously moved that it be printed immediately and distributed to all members. Mr. Colbourn, who has twice assisted the chiefs now in convention, said that the first duty of a fire commissioner was to appoint a good chief and then "let him run the department with a free hand in all matters pertaining to the administration of the same, reserving only questions of policy for the commissioner."

(NOTE.—*Commissioner Colbourn's Address will be printed in full in a subsequent issue of Fire Engineering.*—EDITOR.)

(*Continued on page* 1114)

A Hot Fire and a Small Department

Fast Burning Blaze Gave Department Little Chance to Check It—Extended in Three Directions at Once

THIS fire is an excellent example of what many of the small city fire departments are up against. Poor construction, exceedingly inflammable contents and limited fire equipment and personnel, can result in but one thing—severe fire loss. The town in which the fire described in this article of the series on administration occurred has a population of approximately 5,000. There are the usual line of stores and commercial buildings, with scattered residences covering an area of possibly a square mile. The severest hazard was located in the neighborhood of the fire described in this article.

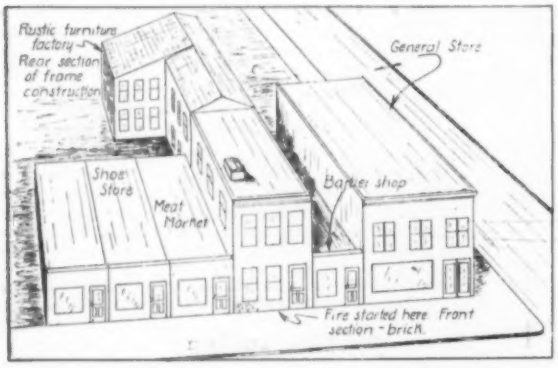
A fairly satisfactory water supply and sufficient pressure to furnish the engines with all they could handle in this particular part of the city were available.

The department consists of three engine companies; Engine Co. No. 1 being equipped with a 500-gallon triple combination; Engine Co. No. 2, a 500-gallon triple combination; Engine Co. No. 3, a 750-gallon triple combination.

There is also one ladder company equipped with a city service truck, there being no special need for aerial ladders.

In the neighborhood of the fire there were two 8-inch mains well supplied by a large feeder.

Four hydrants were within reach of the department, these being placed about as follows: Hydrant A, 200 feet from fire;



Hydrant B, 380 feet; Hydrant C, 420 feet; Hydrant D, 450 feet.

Buildings Involved

As shown in the sketch herewith the fire started in a building engaged in manufacturing wicker and rustic furniture. This building was a combination of brick and frame, the front portion, 40 x 80 feet, being of two-story brick construction with wood finishing throughout and the rear portion, directly abutting against the rear of the brick building, of frame construction and approximately 60 x 80 feet with a 20 x 40 feet ell cut-away.

Both sections of the building were occupied with similar work, and there was a great quantity of highly inflammable finished articles as well as unfinished articles and materials on both floors of the brick section and the frame section as well.

To the left of the fire building was a row of stores, a meat market adjoining the fire building, with a shoe store and other stores in line. To the right of the fire building was a barber shop which in turn abutted upon a two-story general store. The general store was on the corner so that the fire department had the assistance of the width of the street as a fire barrier on this side.

The Fire

Judging from the only report available, the brick building seemed to take fire all at once. People were passing the building in the evening around 7 o'clock and there was apparently no indication of fire, but at 7:10 the fire seemed to flash through both floors. An alarm was sent in by telephone to the fire department and the chief, receiving the message, immediately dispatched two engine companies and a ladder company. He arrived with this assignment and noticing the condition of the fire sent in a call for the third engine company.

At the time of the chief's arrival both floors of the brick section were fully involved with fire, and flames were being blown out over the meat market through the windows in the left side of the brick building.

Engine Co. No. 3 was stationed at Hydrant C and a single line stretched to operate on the fire from the front of the brick building. A 1¼ inch nozzle was used. Engine Co. No. 2 was stationed at Hydrant B and a single line was stretched to the roof of the meat market to operate through the second floor windows onto the fire.

Engine Co. No. 3 was stationed at Hydrant C and a single line stretched through the meat market to the rear of the brick building to operate on the fire at this point.

Members of the truck company were assigned to assist in operating lines and also two men were delegated to go to the frame building at the rear of the brick building and close doors connecting the brick section with the frame division.

The three lines operated in these positions for possibly ten minutes when it was found that the fire was rapidly going through the roof of the brick building and making it too hot for the men on the roof of the meat market to operate their line from a near position. This line was therefore backed away and had to operate at a disadvantage from a distance.

The chief ordered a second line stretched from Engine Co. No. 3, this line going to the front of the building to operate in covering the barber shop and also aid in controlling fire on the second floor.

But the fire gained in intensity and eventually it entered the cock loft or open space above the ceiling of the stores in the one-story row. So rapidly did the fire spread that the men operating on the roof of these low buildings had to withdraw in a hurry without accomplishing their purpose in wetting down the second floor of the brick building. After retreating to the street this line was put in operation at the front of the building and attempted to drive the fire back from the front on the second floor.

It operated in this manner for a few minutes and then was assigned by the chief to operate up into the cockloft or dead space above the stores to the left of the fire buildings.

But the fire in these buildings spread more rapidly than the department had figured on and it was but a few minutes until a row of three stores was fully ablaze.

At this point the fire had reached such proportions in the main building that the building to the rear took fire and soon got beyond the control of the department.

When it was seen that the frame building to the rear was ablaze, efforts were then directed toward covering exposures with a hope that the fire could be confined to the brick building, the frame building to the rear and possibly one or two of the stores to the left of the fire building.

Again the department was to be disappointed, for fire continued to spread and soon involved the barber shop and finally the general store.

Vigorous efforts were made to hold the fire from burning through the barber shop but the frame building burning at the rear of the general store soon set fire to the rear of the general store and once this was ablaze, the destruction of the barber shop could not be prevented.

As it was, the fire before it was finally extinguished or brought under control destroyed the entire group of buildings shown in the sketch, including the three one story stores, the two story factory with frame addition at the rear, the barber shop and the general store.

The Editor's ideas on the handling of this fire will be given in the next issue of this journal.

Firemen Accused of Being Firebugs—The firemen of the Neptune, N. J., Township Fire Department are offering a reward of fifty dollars to try and locate the one who started the rumor that the firemen have been active as firebugs.

Providence, R. I., Firemen to Get Pay Increase—The aldermen of Providence, R. I., have voted for an increase in the pay of the members of the fire department from the chief down.

Indian Jailed for Setting Fire in Basement—A Mohawk Indian once a member of "Buffalo Bill's Circus" was sentenced to the workhouse for setting fire to a basement in a New York city tenement. When discovered through the odor of smoke, he was found sitting cross legged on the floor with a small fire going, as he said, in order to keep warm.

Modern Fire Alarm Signalling

Manual Transmitters and Repeaters—Description—Some of the Common Troubles and Remedies

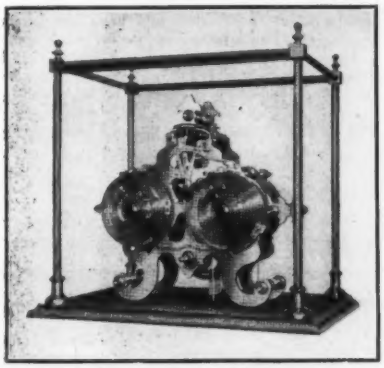
By E. E. KEIRSTEAD, E. E.

THIS is the twelfth of a series of articles on the care, installation and repair of various phases of fire alarm work. The author has had practical experience in this field, and he will answer questions on this subject that are submitted to him by the readers, free of charge. The only condition is that a stamped envelope must be enclosed for reply.

Description

A manual transmitter provides a flexible means of sending any desired signal number or code number over a circuit using a gong, whistle, register or an indicator.

There are three different kinds of transmitters now manufactured, namely, The Peirce, Cole and Excelsior—the former two being of the flexible type in that any desired number can be set up and sent out; the latter type employs a cut wheel for each signal number and it is necessary to have a separate wheel for each number.



—Courtesy of Gamewell Company.

Fig. 30—Peirce Transmitter

The Excelsior transmitter movement is of the same type as the latest alarm boxes and it is equipped with an non-interfering magnet. The signal wheels are supported when not in use by pins installed in the bottom part of the case. When it is desired to transmit a signal the correct wheel is selected and placed on the shaft of the movement and locked; the lever is then pulled and the signal is transmitted.

The Peirce and Cole manual transmitters are very much more speedier and selective, since it is possible to set up any desired number from 1 to 999 or 9999, depending on whether the three or four dial type is used. The dials are on the front of the transmitter and contain a small window which allows the covering up of all the numbers except the one desired. The dials are locked in position by a small thumb latch, making it impossible to send out a jumbled alarm when once locked.

The Excelsior and Cole transmitters are of the spring drive type and are normally unwound, the pulling down of the handle winding the spring. The Peirce transmitter is weight driven and can be had in hand or motor wind or both, as desired.

The speed of the signal on all transmitters is governed in the same manner as an alarm box by means of a fan type governor. By changing the size of the fan, the speed is effected the same as on an alarm box. There are four stop pin holes on the side of the transmitters, allowing a stop pin to be inserted to stop the movement of the handle to give 1-2-3 or 4 rounds, as desired.

These transmitters can be obtained in either the open or closed circuit type and should be ordered from the factory set for the speed desired. The transmitter can be placed in the main line circuit or can locally operate a repeater, joker or gong repeater, master relay, or it can operate any type of auxiliary apparatus.

Manual transmitters have been in successful operation for a period of years in the central offices of Boston, Mass., Pittsburgh, Pa., Lakewood, Ohio, Detroit, Mich., Baltimore, Md., and hundreds of others. With a minimum amount of service and care they have always sent through their proper signals.

In very small towns, where it is almost an impossibility to provide a system of alarm boxes, a manual transmitter will furnish a good type of alarm system. The transmitter is placed in the local telephone office and when an alarm of fire is received over the phone, the telephone operator will set up a number predetermined, and send out the signal. A local factory usually has a whistle which is used, and in this way the call men are informed of the location of the fire.

It is necessary to have a dummy box list to work this system. Dummy boxes are allotted to different streets and locations the same as a real box would be, this providing a means of location.

If anyone would like further information on this way or method of protection, the author will be glad to assist them or place them in touch with the manufacturers' engineers, who will assist them.

Installation

Excelsior transmitters should be installed near the telephone desk or near the desk of the house man, because it is only telephone calls which are sent out from this machine. The transmitter can be attached to the wall and should be installed at a height which will allow an average size man to readily place the wheels on the movement and set it in motion.

The place selected should be dry and clean if the transmitter is to give good service and long life. Transmitters in a small office are usually installed in a panel on the wall or set in an operating desk complete. In large offices both the Peirce and Cole transmitters are placed as units in an art metal cabinet, the panel of which contains the necessary controlling switches and relays.

Before installing a transmitter make an operating test by placing the transmitter in a closed circuit consisting of a gong and a few cells of battery and note its operation. After checking the results of the test it can then be placed in its permanent position.

—Courtesy of Gamewell Company.

Fig. 28—Excelsior Transmitter

In figure No. 28 an Excelsior transmitter is shown and the view will give one an idea as to how it should be installed. In figure No. 29 a Cole transmitter is shown placed in a panel as it would be in a large office, and the view will give one a good idea as to its installation. The Peirce transmitter is shown in figure No. 30 and from this view one can see that it is possible to set this type on any kind of an approved pedestal.

When installing any kind of transmitter, make sure that it is set square and at right angle to the base of the machine. Test the panel with a square and make sure that this condition exists.

There are only two terminals on a Cole transmitter, both of these going to the master relay in series with a local battery. If a telltale light and buzzer is desired to give warning of an open local circuit, a small relay can be put in series with the transmitter circuit and an individual battery used for the light buzzer.

Peirce transmitters are somewhat more complicated and are

generally wired differently for each installation, but, regardless of the wiring, it is necessary to have a local battery to operate it. On some types of transmitters it is possible to set up the number on a single dial and by use of a transfer switch and a governor, send out both the fast and slow time on the one machine.

These transmitters are very heavy and a good dry, strong place is needed to support them. A glass case entirely surrounding the machine is supplied to keep all dust and foreign matter away from the intricate parts of the machine. Always use the blue-print sent with the machine when installing a transmitter or when making changes or repairs.

Operation of Transmitters

There is very little to be said relative to the operation of the Excelsior transmitter, but the following will perhaps help a new operator or a beginner. When an alarm of fire is received at

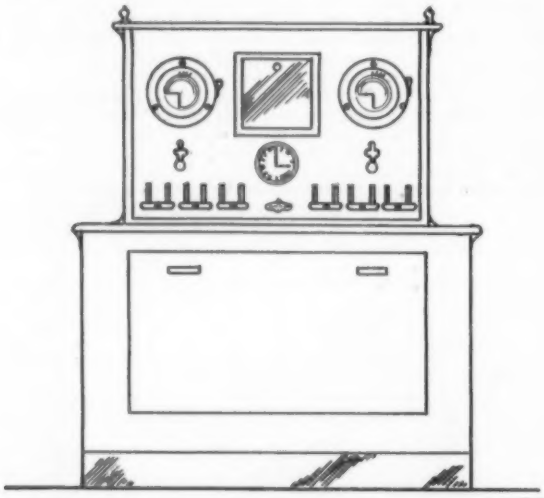


Fig. 29—Cole Transmitter as Installed in Central Office

the station or at the office, the signal wheel bearing the number allotted to the box nearest to the street or block the call is received from, is taken from its support and is placed on the movement shaft. Care should be taken to see that the wheel is on the shaft secure and is latched. Failure to do this will result in a jumbled up signal or no signal at all. Before the hook is pulled set the selector which determines the number of rounds to be set at the proper place and latch it there. Next see that the cut out switch in the bottom of the cabinet is on an "on position," pull the hook and let the signal go through. This is all that is necessary to transmit a signal on this type of transmitter.

Operation of Cole Transmitter

The Cole transmitter is a selective dial type transmitter and it is possible to transmit any given number on this machine. For the benefit of those who want to know how to operate it instructions for operation are given.

There are either three or four dials on this type of machine depending on the numbers of the alarm boxes in the district. These following instructions are used for both types.

The under or bottom dial on the transmitter is the first number dial and the top dial is the last number. For instance to properly set up the number 5927 the under dial is brought around to the right until figure 5 appears in the window. At this point the dial is latched up by means of a thumb latch on the top of the dial. The number two dial is next brought around to figure 9 and latched, the third dial brought around to figure 2 and latched, the fourth or top dial is brought around to figure 7 and latched up. The next thing to do is to set the round selector at its proper place and latch it at this point. If no round selector is found a small pin is supplied and should be put into the hole desired, either 1-2-3-4, depending on the number of rounds desired. It is very necessary to see that all dials are latched or it is possible for a dial to slip back. The signal then received will be improper and not correct.

As an aid to new operators or on a new installation the bevelled edges of the windows on the dials can be painted with a red paint so as to allow a man a better and clearer view of the number in the window. With practice a man can set up alarms on these transmitters at a very high rate of speed, and to the layman it is astonishing to watch an old operator setting up an alarm.

Operation of Peirce Transmitters

The same directions as given for the Cole transmitter can be used in setting up the Peirce transmitter. In addition a little is mentioned about the auxiliary apparatus sometimes used with these machines. On machines using the same dial set up for both fast and slow time, it is necessary to throw a transfer switch in the proper position; the transfer switch also takes care of the speed rate. On some machines there is in addition a polarity switch which has to be thrown on the change from fast to slow time and this is also true where one pair of wires are used for both fast and slow transmission. Special care is to be observed to keep the machine wound up at all times, and this should be done after every alarm.

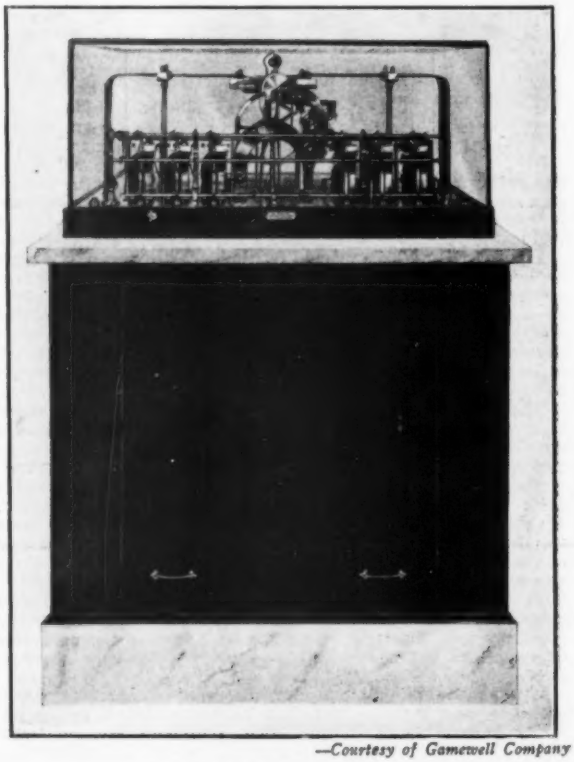
These machines may be had in speeds of from three second blows to one-quarter second time. There should be at least one reserve machine in each office to allow the working of the system in case of a breakdown of a machine.

The Cole transmitter is manufactured by the Gamewell Company and was designed and perfected by Mr. Cole, engineer for that concern. The Peirce transmitter was designed and manufactured by Mr. Peirce, who at present is building these transmitters at the factory of the Gamewell Company.

There is very little to get out of order on these machines and no instructions on repairing will be given here. If a machine is out of order get another machine from the factory and send the damaged one back for repairs. Do not try to remedy the trouble yourself unless you are an expert. It is possible to impair their future working order by an incorrect adjustment or to put them out of time. Any trouble with the local circuit should be corrected at once and the transmitter should be in the circuit at all times.

Description

In figure No. 31 a standard 6 circuit non-interfering repeater is shown and is of the latest type manufactured. A repeater



—Courtesy of Gamewell Company

Fig. 31—Six-Circuit Repeater.

is used in automatically repeating alarms received over one circuit to all others. There are several types of repeaters such as automatic box alarm repeaters, tapper or gong repeaters and joker or fast time repeaters. The automatic box alarm repeater receives the alarm on a one circuit magnet whose operation releases the train work and allows this mechanism to open and close all the circuit magnets in the machine, thereby repeating

(*Continued on page* 1110)

WITH THE EDITOR

Notable Chiefs' Convention

Much that will have a lasting effect on the work and prosperity of the "International Association of Fire Chiefs" (formerly Engineers) was enacted by the members in the New Orleans convention just closed. Not only will the effects be felt in the ranks of the actual membership, but they will spread out and influence the entire fire-fighting profession of the United States and Canada and beyond.

The change in the name of the organization is one of these moves—important in the fact that it removes from the designation of the association the term "Engineer," which has long fallen into disuse in designating the head of the fire department, and substitutes the more expressive term "Chief."

This is a change of expediency. But some of the other alterations in the constitution will have a much more far-reaching effect. Most important of these is the change in the requirements for membership and the fees therefor. The adoption of a dual membership will exert a far reaching effect, not only upon the association and its members but also upon the fire service in general.

The new plan makes membership in the association available to a great number of chiefs in the smaller cities and towns, who by reason of the higher rate of the dues and inability to attend conventions, were practically barred from membership in the association. The new low rate—$2.00 for those who do not attend the convention—will place the membership within easy reach of every chief throughout the land and every fire department executive not already a member should at once take advantage of the new rule and join the association.

This added membership, coupled with a sure profit from the moving picture, "The Fire Brigade," will enable another important step in the association's life to be taken, the appointment of an executive secretary.

That the officers of the association are aware of the importance of this move can be seen in the appointment to the new office of Jay Stevens, State Fire Marshal of California. No better choice could have been made. Jay Stevens, in the splendid work he has done in connection with the moving picture "The Fire Brigade," has proven his ability and fitness for the job. But even without this testimony the record of long and efficient service of Chief Stevens as Secretary of the Pacific Coast Association of Fire Chiefs would be sufficient to show his fitness for this wider field of activity.

Another very wise move of the association was the adoption of an honorary life membership, a graceful method of rewarding those members and others who have done notable work for the association and for the fire service in general.

A very important feature of the convention was the exhibition of new apparatus and equipment, held in the commodious United States Army Base Building. Thanks to the hard work done by Chairman "Bill" Daley and Assistant Chief Jack S. Timlin, of New Orleans, of the Exhibit Committee, the exhibits this year were of great interest to the members. An excellent plan adopted was the giving up of Wednesday of convention week to the exhibits and demonstrations by manufacturers. This enabled the chiefs to derive all of the benefits from these features, without slighting the business sessions.

The fifty-fourth annual convention of the International Association of Fire Chiefs may well be looked upon as an epoch-making one in the history of that organization.

Discipline in the Department

It is always a pleasure to witness the working of a smoothly operating machine; this is equally true where the units of the machine are human beings. The Editor enjoyed something of this sort when he was privileged to see the Providence, R. I., Fire Department in operation. Not, however, in the action and excitement incident to the extinguishment of a fire, but in the ordinary work of the daily station routine.

As the chief entered the various stations, every man, without an exception, from the captain down, snapped to attention and a military salute. This, too, was no parade demonstration, as the chief's visit, in every case, was unexpected. It was, on the contrary, the spontaneous action of a body of well disciplined and well drilled men.

Every piece of apparatus inspected shone like new, every motor was so clean that it seemed Providence surely never had any fires. And yet some of the engines had been out all the night before at a gruelling blaze.

This department is typical of the American Fire Service, embodying cleanliness, preparedness for every emergency, efficiency and a discipline which is not a time-serving observance of form, but is the material expression of a love of the service and a desire, from the chief to the veriest rookie, to excell in the profession which the fireman has chosen for his own.

Political Firemen

As election day draws near reports are coming in at an increased rate from various points in the country telling of participation in election activities by firemen. In one large eastern city one of the political parties is planning to take

action against fire department members who have been active in election work for violation of the rules of the department.

Even where rules of the department do not prohibit electioneering on the part of department members, the participation in such work by the members is a practice dangerous to themselves as well as to the city.

It is usually the case that electioneering by members of the fire department takes place in cities not under civil service. In such instances, when there is a change in politics, there is apt to be a change in personnel in the fire department, and this is just what may be expected. Naturally, the change in politics means trouble for the political fireman.

The city suffers, too, by such a change, for every change entailing alteration in personnel weakens the department's efficiency. The fire chief who permits his men to electioneer, either through his leaning toward the political party in power or through timidity in opposing the party's wishes, is preparing for his own official funeral.

There is only one safe course—keep the men entirely out of politics. If the chief has no plausible reason for so doing, it is up to him to get an ordinance through the city council prohibiting participation by members of the fire department in political activities.

Please Note Our Western Office Address

Harold T. Murray, who recently became Western Manager for FIRE ENGINEERING, is now located at his new headquarters in the Peoples Trust & Savings Bank Building, 30 North Michigan Avenue, Room 713, Chicago, where he will be glad to hear from any of our readers who have matters of common interest to take up either in connection with news items, articles, subscriptions or advertising.

The telephone number is Central 4922, and we hope that our readers will make good use of the facilities offered by this organization.

Rockland County Firemen Meet

A meeting of the Rockland County Firemen's Association was held at New City, N. Y., and the members were the guests of the New City Fire Department on October 8.

Following the business meeting, Inspector O'Connell of the Bureau of Fire Prevention of the New York fire department gave an illustrated talk. Motion pictures on this subject were shown and National Board of Fire Underwriters' literature was distributed.

Spring Valley extended an invitation that the November meeting of the association be held there.

KANSAS CHIEFS AND FIREMEN HOLD GOOD JOINT CONVENTION

Associations Meet Together at Manhattan—To Meet in Kansas City Next Year—Ladies' Auxiliary Formed

MEETING jointly with a large attendance, the tenth annual convention of the Kansas State Association of Fire Chiefs and the 39th annual of the Kansas State Firemen's Association, convened at Manhattan, Kan., on September 27 to 29, there being more than three hundred present. In spite of the rain which is estimated to have cut the attendance at the annual convention at least fifty per cent, the gathering was a great success.

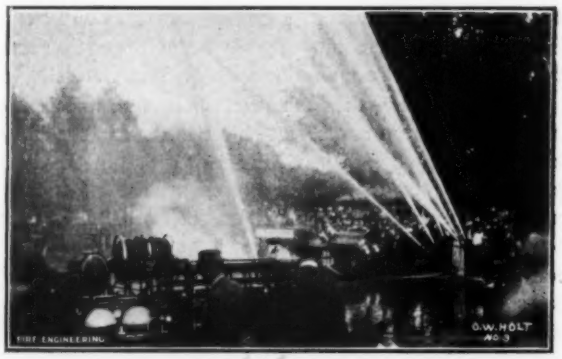
H. T. Harbeson, Age 81. An Old Member of the Association

A demonstration was held of the various makes of fire apparatus, and equipment; the American-LaFrance, Seagrave and Foamite-Childs participated in the tests.

The conventions next year will be held in Kansas City, Kans. The associations have adopted a rather novel plan of dividing the territory into four groups, and of going each year to another district, in rotation. This plan does away with the hard feeling that is the result of the associations meeting mainly in one section of the state.

The ladies of the members have organized an auxiliary with Mrs. Otto Geisler of Leavenworth, secretary.

The new officers of the Firemen's Association are Fred D. Angell, Tonganoxie, president; Charles Hamm, Winfield, 1st vice-president; B. E. Deckert, Manhattan, 2nd vice-president; K. D. Doyle, Wamego, secretary; George T. Mohrbacher, Marysville, treasurer; members of the executive committee, Charles Marsh, Peabody, D. J. Rayburn, El Dorado, and J. Irwin Gabel, Holton.



Apparatus Tests at the Kansas State Firemen's Association

The new officers of the Chief's Association are W. A. Buel, Parsons, president, Joe Waideleich, Topeka, vice-president; K. D. Doyle, Wamego, secretary-treasurer. The aforementioned members and J. K. Bebbett of Hutchinson and Charles Marsh of Peabody constitute the board of directors.

A Group of Those Who Attended the Convention of the Kansas State Firemen's Association at Manhattan

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Stretching Hose.

To the Editor:

Kindly give me full information as regards a pumper being put into service at a hydrant, high pressure service, 1,100 gallons per minute and the method of getting to work—whether the lines are laid by man power or engine from hydrant to fire or from fire to hydrant.

Sincerely yours,
A. A. L.,
Cristobal, Canal Zone.

Answer: The usual American practice in regard to putting an engine to work at a hydrant at a fire is to have the company rolling in with the engine drop off a man at the nearest hydrant on the side of the fire from which the company is responding, this man (or men) taking hold of the end of the hose or looping it around a hydrant while the engine continues on toward the fire. The hose is in this way drawn off the truck. As soon as enough hose is off the engine, the engine returns to the hydrant where it is hooked up and the hose attached to it. Thus the line is stretched by engine and stretched from the hydrant to the fire. When the streets around the immediate vicinity of the fire are congested with other apparatus it is frequently the practice to stretch in by hand, placing the engine at the hydrant at which it is going to operate and stretching the line from there to the fire. This avoids running over a lot of the hose and also avoids confusion and additional congestion where the street in front of the fire is already overcrowded with apparatus and hose lines.

Clapper Valves, Nozzle Pressure on Chemical Hose, etc.

To the Editor:

I would be highly indebted to you if you will answer the following question through the columns of your valuable journal.

Sincerely yours,
W. T. W.
Worcester, Mass.

Question 1. Are standpipe street siamese connections equipped with clapper valves or individual hand operated shut-offs?

Question 2. This question is in reference to Question No. 2 from T. K. A., Brooklyn in your December issue. (A) There were two engines pumping into a standpipe, one engine operating at 158 pounds and the other at 178 pounds. Now if the standpipe street siamese was equipped with clapper would the engine with 158 pounds be able to open the clapper valve at that pressure, against the other engine pressure of 178 pounds?

(B) Knowing the engine pressure of the above problem how would you solve for nozzle pressure with the same layout?

Question 3. (A) There is 200 pounds pressure per square inch generated in a 40 gallon chemical tank. What would be the nozzle pressure through 300 feet of ¾ inch hose with a ¼ inch tip?

(B) What would be the discharge in gallons per minute and the friction loss in the above problem?

Answer 1. Standpipe street siamese connections are equipped with clapper valves. Individual hand operated shut-offs are rarely, if ever, used.

Answer 2. Where two engines are operating through long lines of hose into the same siamese connection to a standpipe system, equipped with clapper valves, both may be discharging into the system through the siamese connection even though the engine pressures are widely different. In the case you mention one engine has 178 pounds engine pressure while the second has 158. In either case there will be friction loss due to the flow of water, assuming, that both are discharging water into the siamese connection. But if only the engine at 178 pounds is discharging water into the siamese connection it would mean that the pressure from this engine delivered at the standpipe siamese must be greater than 158 pounds. Thus if the friction loss from the engine to the siamese connection is less than 20 pounds, the engine at 178 pounds would prevent the engine at 158 pounds from discharging water through the siamese. In this particular case, as in most cases, there is considerable friction loss. The loss is sufficient to reduce the available pressure at the siamese connection to a figure lower than that provided at any engine connected to the siamese. In this particular case if the friction loss were more than 20 pounds the pressure at the siamese from the engine delivering water at 178 pounds would be less than 158, which is the pressure at the second engine. Thus the pressure at the second engine would be sufficient to open the clapper valve against the pressure from the first engine.

Let us use specific figures. Assume that the pressure drop in the line from the 178 pound pressure engine is 30 pounds. The pressure at the siamese connection from this engine will be 148 pounds. Now the engine delivering water at 158 pounds pressure will be able to build up its full pressure of 158 pounds at the siamese, providing there is no flow. If, thus, the clapper valve is closed when the second engine starts operating this pressure of 158 pounds is promptly created, opening the clapper valve in the siamese against the 148 pounds from the first engine. Just as soon as the clapper valve opens and water begins to flow in the line from the second engine the friction loss will cause the available pressure from the second engine to decrease, limiting the amount of water which the second engine will deliver.

(B) Where the engine pressures are known the simplest way of solving for nozzle pressure in this particular problem would be to average the two lines, first changing them to 2½ inch hose. When these two lines are averaged we get an equivalent length of a single lines of 2½ inch hose. Then take into account the friction loss in the standpipe, the back pressure, and finally change the layout in the building to the equivalent of a single line of 2½ inch hose. Now with the layout made into the equivalent of a single line of 2½ inch hose, average the engine pressures. This will be done by adding 178 and 158 and dividing by 2. Assuming this average pressure to be the pressure at the engine on the single line, we proceed in solving the problem as follows: Deduct back pressure from this average pressure. Deduct friction loss in standpipe from the remainder.

Add the street layout to the building layout, giving a single line of 2½ inch hose. Then use the Underwriters' Formula employing the remaining pressure, after the back pressure and friction loss in the standpipe have been deduced, as the engine pressure. The size of tip will be as given in the problem.

Answer 3. (A) The solution of this problem would be as follows: Change the 300 feet of ¾-inch hose to 2½ inch hose. This is done by dividing the factor for changing ¾-inch hose to 2½ inch hose, namely .0029.

300 divided by .0029 = 103,500 feet of 2½ inch hose.

Before using the Underwriters' Formula for finding nozzle pressure we must first have the value of K. This for 2½ inch hose and ¼-inch nozzle is found by the usual rule and is 0.0039.

L is the number of 50 lengths of hose in the line and is equal to 103.500 divided by 50 or 2,070. Nozzle pressure then equals 200 divided by $1.1 + .0039 \times 2070$.

That equals $\frac{200}{1.1 + .8073} = \frac{200}{1.9073} = 105$ pounds.

This is the nozzle pressure.

(B) The discharge in gallons per minute is found by formula: Discharge $= 29.7 \times 1\frac{1}{4} \times 1\frac{1}{4} \sqrt{105} = 19$ gallons per minute.

Friction loss = engine pressure — nozzle pressure or 200 — 105 = 95 pounds.

Somerville Questions and Answers

To the Editor:

Will you kindly answer the questions which were asked at a recent examination in Somerville.

Very truly yours,
D. T. J.
Lawrence, Mass.

Question 1. Assume a fire in a large closet on the second floor

of a three-story frame dwelling containing a large quantity of clothing. The house is full of smoke. Explain in detail how you would extinguish the fire with a combination ladder truck and one engine company.

Answer 1. Nothing is mentioned in this problem as to life hazard and it will therefore be assumed that no life is at risk. Engine company stretch at once to stairway to fire floor with water line equipped with controlling nozzle, preferably one-inch.

Truck company to ventilate at once by opening windows from the inside, if possible, and if not possible, from the outside by use of ladders.

After truck company has accomplished this, and after the line has been gotten into operation and brought fire under control, the truck company should make a thorough inspection along lines of possible spread of fire to make sure that no fire has passed beneath flooring to other points of the building nor gone up through partitions or other vertical passageways to floors above or below.

After fire is fully out truck company assists in overhauling, making sure that the last trace of fire has been killed.

Question 2. Describe in detail how you would remove the wood lath and plaster to get at fire in the ceiling of a room 12 x 15 feet.

Answer 2. For an operation of this sort it would not be necessary to remove all the lath and plaster but just sufficient to put in operation the necessary equipment for combatting the fire. If the direction of travel of the fire is known, open up so as to head-off the fire.

Plaster can be readily removed with a plaster hook or six-foot hook, for the laths are fastened only by small lathing nails which are easily removed. Drive the hook through the lath and plaster and pull down enough lath and plaster to make the desired opening.

If it is found necessary to remove practically all the lath and plaster from the ceiling of the room, make sure there are no materials around of a valuable nature which will be damaged by the falling plaster. The operation where only one hook is employed is to start at one side of the room, either at the center of the wall or at one end, drive the hook through plaster and lath and begin ripping down. Work in the direction the beams run.

Question 3. Explain in detail how you would extinguish a chimney fire.

Answer 3. Water should not be used to extinguish fire in a chimney flue as it is liable to burst the flue or cause the chimney wall to crack; neither should a brick or such article which would be liable to get caught in the flue be used.

Before attempting to extinguish a chimney fire be sure to close all openings to the flue that are below the roof so as to prevent the falling soot from spreading over the premises and doing unnecessary damage.

A bag of salt, pail of small coal or sand should be dumped down the flue at the roof opening. The salt will extinguish the fire by chemical action, when it comes in contact with the fire, while the coal or sand will carry the soot down to the bottom of the flue where it can be removed.

Chemical powders, composed chiefly of bicarbonate of soda or similar salts are also effective in extinguishing such fires. Throw a handful of the powder up the opening at the bottom and close tightly to prevent soot from scattering.

An ounce of sulphur, lighted, and placed in a stove, will quickly extinguish the fire with the fumes as they ascend.

Another good method is to secure small pieces of heavy chain to another piece of about ten feet in length, to which is added enough rope to allow the chain to be drawn from the top to the bottom of the chimney. By drawing the chain up and down the chimney several times at one position the soot is readily dislocated and falls to the bottom, the fire being extinguished in the process.

A blank cartridge fired upward from the base of the chimney will also scatter the collected soot which may be burning.

Question 4. What is the cause of spontaneous combustion? Name five substances in which spontaneous combustion frequently occurs.

Answer 4. "Spontaneous combustion" is a misnomer. Ignition, rather than combustion, is the phenomenon which is "spontaneous." The proper expression therefore is not "spontaneous combustion," but rather "spontaneous ignition."

Spontaneous ignition may be defined as "ignition by internal development of heat." All combustion is a process of rapid oxidation, that is, the energetic confining of oxygen with the substance burned. Combustion always involves oxidation, but oxidation may take place without combustion. Oxygen is usually supplied from air, which is about one-fifth oxygen, but may also come from certain chemicals. The rusting of iron and rotting of wood are familiar examples of slow oxidation. In slow oxidation, just as in combustion, heat is evolved. The amount of heat developed is the same for a given quantity of material, no matter whether the oxidation be slow or take the form of combustion; from wood for example, the same amount of heat is developed whether the process be decay or fire. But in slow oxidation under the ordinary conditions, heat is produced so slowly that it escapes before there is any appreciable rise in temperature. Under other conditions in material subject to oxidation so subdivided as to present a maximum surface, and at the same time so protected as to prevent the escape of heat, the temperature rises and oxidation, like all chemical action, proceeds faster, in turn further rising the temperature until the point of ignition is eventually reached. This is spontaneous ignition.

Spontaneous ignition may in general be said to be possible in all classes of substances that will burn, but only possible because of some special favorable condition or quality. Eliminating certain chemicals and explosives, which need not be considered here, three conditions are always necessary. One is that air must be present. The second is that the material be finely divided so as to present a relatively large surface subject to oxidation. The third is that the material be so placed that heat cannot readily escape. A large pile of finely divided material, such as coal, supplies all three of these conditions. The interstices are so small that they do not permit sufficient circulation of air to effectually cool the mass, while they do permit the ingress of sufficient air to support oxidation. Moisture is also a factor in spontaneous ignition, being a necessary condition in most cases.

Bacteria or micro-organisms are sometimes responsible for fires, the heat being accompanied by fermentation or putrefaction. Although the temperature produced by such actions are not high, yet if the heat cannot escape a gradual rise in temperature results, which in turn accelerates the action and may cause the ignition point to be reached.

(*To be continued*)

A Correction.

To the Editor:

In a spirit of co-operation, and certainly not criticism, since to a large extent such knowledge as I have gained of fire stream hydraulics has been gained through your journal, I wish to call your attention to an error in the December issue of the *Fire Engineer.*

Answering T. K. A. of Brooklyn, New York on page 252, Answer to No. 2 question, you use the Underwriters' Formula with the form reversed.

You state that "the pressure at the standpipe on the 9th floor necessary to give 100 pounds pressure is found by the Underwriters' Formula as follows: Engine Pressure = nozzle pressure divided by (1.1 plus KL) and using it thus you find "then engine pressure solves out to be 69.7 pounds."

The Underwriters' Formula is, of course, engine pressure equals nozzle pressure times (1.1 plus KL) by which the engine pressure or in this case the pressure at the standpipe on the 9th floor solves out to be 133.4 pounds, approximately, instead of 69.7 pounds.

I have proven this by adding the friction loss in hose from standpipe to nozzle to nozzle pressure. This layout of hose equals in friction loss a total of 33.1 feet of 2½ inch hose.

If discharge with 1½ inch nozzle at 100 pounds is approximately 675 gallons per minute, the friction loss in 33.1 feet of 2½ inch hose equals (6.75 x 6.75 x 2 + 6.75) x .331 or 32.4 pounds, approximately. The nozzle pressure of 100 pounds plus the friction loss of 32.4 pounds equals the pressure at the standpipe of 132.4 pounds.

Even though there is a difference of one pound between the two solutions I believe each solution proves the other to be near enough correct for practical purposes. Then the engine pressure on the first line would be 133.4 + 43.4 + 25 + 40 or 241.8 pounds instead of 178 pounds.

The engine pressure on the second engine would be 133.4 + 43.4 + 25 + 20 or 221.8 instead of 158 pounds. May I also mention a misplaced decimal which though clearly a mistake in printing may be confusing to some. As printed it is "back pressure in standpipe — 8 stories — is 8 x 12½ x 4.34, or 43.4 pounds."

Obviously this should be, 8 x 12½ x .434 or 43.4 pounds, the .434 being the weight of a column of water one inch square and one foot high.

Lieut. E. V. Lindquist,
Hose Co. No. 12, DesMoines, Iowa.

Answer: Your solution is correct and errors you have pointed out are noted. It is indeed gratifying that readers of FIRE ENGINEERING can so quickly detect errors in solutions as given. The Editor indeed appreciates Lieut. Lindquist's comments and the fact that he has not only called attention to the errors but has given the figures which his correct solution sets forth.

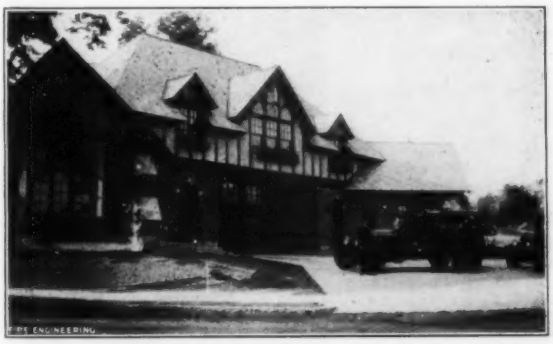
Design for Fire Alarm Headquarters

(*Continued from page* 1091)

gallon gasoline tank for the engine is situated in the rear outside of the building. The engine and generator sets are in a room by themselves. The voltage is 125 and amperage 44.

Contents of the Battery Room

In the battery room there are seven 4 shelf battery racks each 15 feet long with capacity for 3,400 cells. Other equipment includes a control panel, one 60 circuit protector board, three 10 circuit box line relay boards, five 10 circuit storage battery switchboards, one 6 circuit primary board, and one 6 circuit secondary alarm board, nine 6 circuit Nonpareil recording sets, one 50 P B X telephone desk, 10 circuit cordless magneto telephone desk, superintendent's recording set with one circuit Nonpareil register time stamp, Nonpareil take-up self winding master clock with Western Union service controlling time stamp. All of the recording sets are mounted on art metal pedestals with blue Vermont marble tops. The switchboards are also of blue marble. At present there are 344 fire alarm boxes in service, but capacity is provided for handling 750 boxes. The equipment includes one A. D. T. recording set, a 250 line



New Bungalow Fire Station in the Tatnuck District of Worcester, Mass.

entrance cabinet, and a 100 line telephone entrance cabinet.

Cost of the Headquarters

The cost of the building without equipment was $76,000, the Gamewell contract amounted to $99,353, and the cost of laying cables was $45,000, making a total outlay of $220,353. Three 153 wire cables were laid, each cable being approximately one mile in length.

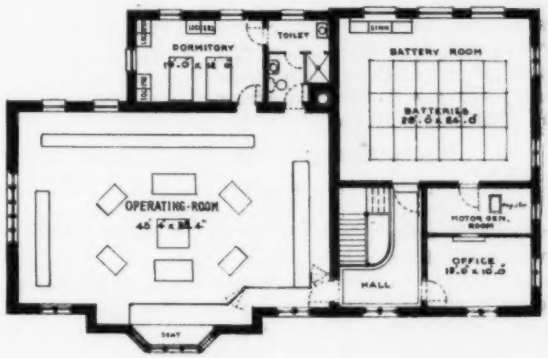
The dormitory has windows opening on the park at the rear of the building and connects with the toilets and shower baths. The fire alarm force consists of a superintendent, chief operator, six assistant operators, and five linemen. Two operators will be on duty at all times.

The superintendent's office is located at the head of the stairway on the opposite side from the operating room and is furnished with chairs, table, and desk.

Act of Legislature Necessary for Use of Park

In order to obtain the right to build the fire alarm headquarters in its present site an act of the legislature was necessary to grant the use of park land for this purpose. The act was passed in 1914. Chief Charles L. McCarthy, the Box 4 Associates, and Mayor Michael J. O'Hara worked together to point out the urgent need for the new fire alarm office and finally succeeded in obtaining the necessary appropriation and getting the building started.

The old location of the fire alarm office in the central fire station at the corner of Mercantile and Foster streets in a congested district of the city was a hazardous one and several times the building was threatened with destruction. The new fire alarm headquarters assures Worcester that the nerve center of its fire department



Floor Plan of the New Fire Alarm Headquarters of Worcester, Mass.

will be safe from danger even in the event of a sweeping fire.

Handsome New Bungalow Station

The new bungalow fire station, which has been pronounced a model structure in every way by all who have seen it, is located at the junction of Pleasant Street and Chesterfield Road in the Tatnuck district of the city.

This station is of strikingly beautiful architectural design and it was built from plans which were published in FIRE ENGINEERING some time ago. The building is of the popular California type with brick and stucco construction, cement base, and roof of varigated slate. Architect Hachadoor Demojian, of Worcester, developed

Architect's Drawing of the New Bungalow Fire Station in Worcester

the plans from the ideas suggested in this magazine and the building contract was awarded to Arthur N. Booth.

The bungalow is two stories high in the centre with one story wings on each side of the apparatus floor which is two feet below the side platforms. There is room enough

on the main floor to accommodate an engine, hose wagon, and hook and ladder truck.

There are three windows with peaked individual roofs in front on the second floor which give ample light to the large recreation and smoking room. Flower boxes adorn the front of the house below the window sills.

Each side of the building duplicates the other, there being an officer's room in front and five single rooms behind on each side, swinging doors leading from the rooms to the platform two feet above the apparatus floor. The officers' rooms are large with three triple section windows, desk, and two closets. Each of the single rooms has two closets, mirror, basin of porcelain with hot and cold running water, and outside window. There is a special room in front equipped with gong, register, and telephone for use of the man on patrol.

Improvements in Apparatus Room

The apparatus floor is concrete and there is an electric fan and blower to carry off the exhaust gases, this arrangement being connected to the apparatus exhaust by means of a flexible pipe which slips off as the apparatus starts ahead. This equipment starts to function automatically when the alarm gong sounds. The fan and blower may also be used when the apparatus motors are run for test purposes, the exhaust fumes being thus carried outside of the building. There are two shower baths and a toilet on each side of the apparatus floor. In the rear center, back of the apparatus, space is provided for stalls for horses to use with sleighs during heavy snow conditions in mid-winter. To the right at the rear there is a room with racks for drying hose with steam pipes below the racks. There is also a clothes dryer with gas heater. To the left at the rear in the space corresponding to the hose room there is a kitchenette and dining room, a large gas range being provided to make preparation of meals practicable and easy. There is a small basement in the rear in which are installed the oil furnace and hot water heater.

The front doors for the apparatus are self closing, being regulated by a device originated by the late William McClure, former superintendent of fire alarms in Worcester. Three minutes after the apparatus has left quarters the doors are closed by the clock-work device which starts by an electrical connection that is made when the doors are opened.

Attractive Recreation Room

The recreation room on the second floor is most attractive and is decorated with several rare old colored prints which were presented to the station by a friend of the department. The cost of the bungalow station was $55,000. There are two unfinished rooms leading off the recreation room and these are available for storage of old records or other purposes. The bungalow is now occupied by Engine Company No. 9 in charge of Capt. Charles Napp and Capt. William H. Kirk. The equipment consists of a 750 gallon American-LaFrance triple combination motor pumper.

With the addition of this bungalow station and the new fire alarm headquarters the Worcester fire department is now equipped for all emergencies and adequate protection is given to all sections of the city, the bungalow station being situated in a district that is building up very rapidly.

The Worcester Fire Department

The Worcester fire department, under command of Chief Charles L. McCarthy, consists of 327 officers and men and is operated on the two platoon basis. There are two deputy chiefs, four district chiefs, nine engine companies, seven truck companies, and several hose and chemical companies. The apparatus is all motorized and includes one Seagrave water tower, two 1000 gallon Ahrens-Fox motor pumping engines, one 1300 Ahrens-Fox motor pumper, five 750 gallon American-La France motor pumpers, and one 750 gallon Maxim pumper. There are two 75 ft. American-LaFrance tractor drawn aerial ladder trucks, one 85 ft. Seagrave aerial truck with LaFrance tractor, four city service ladder trucks, eleven hose wagons, and one double tank chemical wagon. There are nineteen fire stations including the large brick central station containing the department offices.

McLane Chief of Charleston, W. Va.

With the exception of a short interval during the World War, J. L. McLane, recently appointed chief of the fire department at Charleston, W. Va., has been a member of the fire department since 1909. During the war he was with the fire department of the Nitro government reservation but he came back to Charleston in 1919 and was soon promoted to assistant chief. When Chief Graham resigned to enter the office of the Federal prohibition bureau, McLane was appointed chief.

Chief J. L. McLane, Charleston, W. Va.

Chief McLane is now working out some of the plans of the late Chief C. C. Rand—his first chief who tried to instill military precision in the workings of the department. The plan of weekly inspections of the five fire stations in the city has already been adopted, and he expects to have regular conferences of the company officers to settle any disputes in the workings of the department.

One or two men will be designated in each company for inspection work. Inspections of the department have revealed to Chief McLean that the men are in need of new uniforms, but no attempt will be made to secure them until after the city elections.

All of the equipment is motor driven, and the city has fifty men in the fire department.

J. ROY FULLER

Southwestern Sales Agency of Harrington-Seaberg Corporation

The above group shows the sales agency members of the Leroy C. Bishop organization which handles the fire alarm equipment sales for the Harrington-Seaberg Corporation in the southwestern territory.

Two Towns in Alaska Burn—More than 225 were made homeless when the towns of Douglass and Treadwell near Juneau, Alaska, were destroyed by fire.

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

SAFEGUARDING THE BUSINESS DISTRICT

By J. J. CONWAY

Superintendent, The Underwriters' Salvage Corps., Cincinnati, Ohio

THIS twenty-first installment of the University of Illinois Course in Fire Prevention continues the consideration of a very important phase of the fire-fighters work—the protection of the commercial section of the municipality. It is handled by one well qualified to treat the subject:

Vertical Openings Must be Closed

The next thing after the fire starts—and this is an instance where the architect and engineer in constructing the building can do more than anybody else—is to close off the vertical openings and cut down areas, which can be easily done if the building is properly constructed. I see great frame areas going from one end of the square to the other. The building could be used for the purpose it is now used for and there could be a fire stops and go across the room and cut a six-inch hole to take half and keep the blaze from getting to that magnitude which might be called a conflagration. An architect or engineer will draft a building, enclose his elevators or stairways in perfect stops and go across the room and cut a six-inch hole to take a four-inch coil pipe, and leave it that way. They forget there is no crack or crevice that can be left between the floors that will not carry the gases and the smoke to the ones above; when these floors become filled with smoke that again descends through the same crack, coming in contact with the flame. Then you have an explosion and your building is gone, because that smoke is nothing more than unconsumed gas. When you see the flame of fire you see the consumed gas burning, but the smoke is the unconsumed gas and if that comes in contact with the flame again you are going to have an explosion and fire in every crevice where there is smoke. Therefore, one of the most important things, not only to the saving of the property and extinguishing the fire, but to the preserving of life, is the proper enclosing of fire escapes so people can get out of the building.

Dangers of Inflammable Moving Picture Films

It has been demonstrated that these inflammable moving picture films will burn under water. That's true. Water will not extinguish them. They make one of the hottest fires you ever witnessed if they are in any quantity, so wherever films are stored they should be placed in fire-proof buildings and only a certain amount—the smallest possible to do the business—should be open and on the outside at one time. All they will do is to burn quickly, but the gas generated from them as they burn, if it is not carried off, becomes one of the strongest explosives you have. There is no building yet constructed that would take any fair sized quantity of films, and stand the explosion that would occur after ignition, if the building were not ventilated and ventilated very quickly. Therefore, if I were making rules for storing films, every one of the top windows would have to have weights taken off and be held shut with wires, so the minute there is a fire the windows would drop. If these films become ignited, they will burn anything within forty or fifty feet. A film fire is the hottest flame I have ever witnessed in my life.

Proper Ordinances and the Cooperation of Citizens

In protecting your high value districts you must bring to your assistance several ordinances that will compel proper construction and then you must call for the help of the citizens whose lives and property you are protecting. You must make them listen to you and remove those hazards which are dangerous to the entire communtiy.

In one case, the littering of a dump was the cause of a fire. With a high wind it caught the fences in the rear, the little coal houses and other things, finally got the buildings themselves and wiped out a fair sized city. At Paris, Tex., the sparks from a locomotive fell on a shed and Paris went. See how small the fire was in the start and how important your early notification and quick application is? That's the whole secret of fire-fighting.

The burning of Augusta, Ga., was attributed to an electric iron left with the current on in a millinery shop. Nearly all fires have had their origin in a small way, but spread quickly.

Little Attention Paid to Hazard of Old Structures

We are throwing the strictest kind of restrictions on the better structures, as they are being built but we are paying no attention or have not been paying attention to the old structures.

You take your medical profession. They have found out what is contagious disease, what causes contagious disease and how it spreads, and they are backed up by the strongest kind of laws to eliminate all those things. If it breaks out in your neighborhood, they compel you to go through a vaccination or something of that kind to prevent the spread of it. But, when we leave what we call conflagration breeders in our midst, we are not eliminating the cause of fires.

The time has come in America when we can not any longer hold down the fire loss. We have the best trained men in the world fighting fire and yet our fire waste is growing by leaps and bounds. We can not depend entirely on extinguishment. We must go out into the field and preach the gospel the same as the medical people and others. We must prevent the improper construction of buildings. We must prevent the openings that will allow the spread of fire. We must require fire escapes and things of that kind for the protection of people who work in those buildings and we have to get laws by which we can remove those things that will cause what you might term a conflagration, or a fire beyond what would be an individual fire or one that would tax your department to its utmost. Supposing you were fighting a fire of that kind today and a fire would break out in the opposite part of the town, where are you? Those are important things.

Standing on Threshold of Destruction

We are standing on the threshold of destruction all the time. The fire-fighters of this country have done wonderful work in protecting property and the lives of the people, but the drain from the fire waste has gotten to a place where it cannot be borne any longer.

There is a false impression and always has been—and why anybody should have that impression I don't know—that the insurance companies pay losses. How could they and remain solvent? It is immaterial what an insurance company thinks other than to get advice from their engineers who have been trained along those lines and may be of service to you. They hold within their hands the means to protect themselves. Insurance companies are only collectors and distributors, plus a fair amount for the capital invested, and who is paying it? The citizens of the cities and villages. That's the reason rates are different in different sections.

(*To be continued*)

Nyack Host to New York Fire Patrol

About fifty members of the New York Fire Patrol were guests of the Nyack, N. Y., patrol, one of the few volunteer salvage corps in that district. The invitation was extended as part of the program of the parade and inspection of the Nyack fire department, and thirty-five companies with their bands were represented from New Jersey and Connecticut.

In the evening, under the direction of Chief Harry S. Jones, the public witnessed a fine display of fireworks.

The department fittingly observed Fire Prevention Week by arranging for a gathering addressed by T. Alfred Fleming of the National Board of Fire Underwriters; Capt. Wm. Paul Babcock was chairman of the committee of arrangements. Lacking any appropriations to defray the expenses, the seals of the N. F. P. A., were sold to the public at a profit. The N. F. P. A. booklet on the dangers of home dry cleaning and the "Story of Fire Prevention Week" were distributed at the meeting.

Fremont, Ohio, Apparatus Condemned—The fire apparatus of Fremont, Ohio, has been condemned as obsolete and inefficient by the city officials and members of the Ohio Inspection Bureau.

Chiefs' Convention at New Orleans

(*Continued from page* 1094)

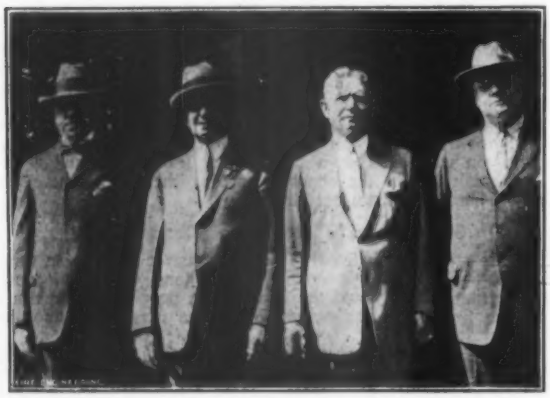
Institute of Technology. Capt. Steidle discussed the various points in the methods of resuscitating persons overcome by gases and described the uses of the various rescue appliances manufactured by the Mine Safety Appliance Company.

Chief Sullivan, of Utica, N. Y., told of his experiences with the inhalator put out by this company, and how he used this device with good effects in treating men who had been exposed to smoke and fumes at fires.

In answer to a question by Chief John Kenlon, of New York, as to where firemen were likely to encounter carbon monoxide, one of the troublesome gases found at fires, Capt. Steidle pointed out that this gas is met with at practically every fire, though in varying quantities. Smouldering fires, particularly, produce it in great quantities.

Dr. Harry Archer, Honorary Surgeon of the New York Fire Department, at the request of Chief Kenlon, gave the association a short and instructive talk on carbon monoxide. Dr. Archer cited how different materials, when exposed to fire, gave off this gas in different quantities; also how the absence of ventilation is conducive to the production of the gas in large quantities. He added that upon arrival at a fire it was frequently possible to tell whether or not a building had been properly ventilated by the number of firemen who had been overcome by the smoke and gases.

"New York," said Dr. Archer, "has used the inhalator for



A New York City Group.

From left to right, Dr. Harry Archer, N. Y. F. D., surgeon; Mr. Todd of the Todd Shipbuilding Co., Chief John Kenlon, and Hubert J. Tracy of the Bureau of Supplies.

four and one-half years, and during the past year alone 138 cases of gassed firemen have been treated successfully." He also pointed out that it is advisable to use the prone pressure method of artificial resuscitation at the same time that the inhalator is employed; also that a physician should be on hand in cases of unconsciousness, for ambulance surgeons are frequently unable to properly treat this type of injury. He also stressed the necessity of continuing treatment, even though the patient appeared dead, for in one case in New York an overcome man was treated for two hours and fifty-five minutes before he was brought back to consciousness.

Following these remarks a general discussion was entered into by Chiefs Healy of Denver, Smith of Pittsburgh, Foster of Portsmouth, Va., and Dr. Archer, in which it developed that while carbon monoxide is lighter than air, it is rarely, if ever, found in its pure state, but practically always in combination with other gases, which make the combination heavier than air, and as a result proper ventilation for carbon monoxide would require low ventilation rather than high ventilation.

Wednesday Devoted to Exhibits

Wednesday was given over to the exhibits, and the commodious United States Army Base Building was thronged all day with chiefs. The exhibits, thanks to the untiring efforts of Chief William F. Daley, Brockton, Mass., chairman, and Assistant Chief Jack S. Timlin, of New Orleans, of the exhibit committee, were both extensive and arranged to the very best advantage.

Among the interesting new pieces of apparatus on the floor of the exhibit hall may be mentioned the following, which excited considerable favorable comment among the visitors:

Ahrens-Fox Fire Engine Co., Cincinnati, Ohio — 1,300-gal. triple combination pumper; purchased by Passaic, N. J. 75 ft. tractor-drawn aerial truck; purchased by Biddeford, Me. 750-gal. triple combination pumper; purchased by Winchester, Ind.

American-La France Engine Co., Elmira, N. Y.—New Metropolitan triple combination 1,000-gal. pumper. Type 75 triple combination 750-gal. pumper; purchased by El Dorado, Ark. Type 17-6 cylinder tractor-drawn 75 ft. aerial truck; purchased by Atlanta, Ga.

Foamite-Childs Corp., Utica, N. Y.— Childs 600-gal. triple combination. Childs 400-gal. triple combination; purchased by Haynesville, La. Foam generator, Foamite HD chemical unit.

Seagrave Corp., Columbus, Ohio.—The new Seagrave Special 600-gal.; 2 purchased by Blackwell, Okla., and 1 by Stowe Township, Pa. Seagrave Suburbanite, 400-gal.; purchased by Ruston, La. Standard Seagrave 750-gal. pumper.

Jaeger-Chevrolet, Detroit, Mich.— Exhibit two Jaeger pumpers mounted on standard Chevrolet chassis.

American Steam Pump Co., Battle Creek, Mich., also exhibited its portable fire pump.

Southern Chiefs Organize

On Wednesday of Convention Week the fire chiefs from Kansas, Missouri, Arkansas, Oklahoma, Louisiana, Texas and New Mexico were called together for the purpose of forming a Southwestern Fire Chiefs Association. About fifty were present at the meeting.

Plans were outlined for the activities of the new body, it being decided to hold one convention annually, in addition to attending the yearly meeting of the International Association of Fire Chiefs.

It is probable that the new association will issue a monthly bulletin as a means of keeping the membership fully informed of developments and the work of the organization.

Officers were elected as follows: President, Chief J. E. Taplin, of Blackwell, Okla.; Secretary, Chief Tom Lyle, of Okmulgee, Okla. A membership committee consisting of one delegate from each of the states represented was appointed by the chair.

Thursday's Session A Busy One

On account of three topics being carried over from Tuesday, the Thursday session was a very busy one. The first paper of this day was that prepared by Chief Stanley S. Coates, of Burlington, Ont., and read by President Armstrong, the subject being "Discipline and Maintenance of Volunteer Fire Departments." The author outlined the steps necessary in building up an efficient volunteer organization, and offered suggestions for improving discipline in the smaller fire fighting organizations.

Three-Decker Fires

The handling of fires in "three-deckers" was well described by Chief Charles H. McCarthy, of the Worcester, Mass., fire department in the second paper of the session. Chief McCarthy, who has had very wide experience in operating at fires in this type of building outlined the essential steps to be taken in order to check the spread of fire and quickly bring it under control.

Apprehending Incendiaries

In a paper by F. R. Morgaridge, of the Arson Department, National Board of Fire Underwriters, on "The Passage of Adequate Laws and the Establishment Procedure for Apprehending and Convicting Incendiaries," the author very ably outlined the subject and called attention of the points which should be incorporated in laws which would make possible the conviction of incendiaries. He cited the Jersey arson law as a model, and also called attention to the model law developed by the Fire Marshal's Association.

A lively discussion followed, particularly emphasizing the troubles developed from over-insurance, in which Chiefs Foster of Norfolk Navy Yard at Portsmouth, Chief R. O. Mesnar of Canton, Ohio, Chief Hersey, of Hollywood, Fla., and Fire Marshal Gamber, of Illinois took part.

Hazards of Oil Burners and Heaters

Chief Ross B. Davis, of the Philadelphia Fire Department gave a very interesting talk on Domestic Oil Burners. "I am unalterably opposed to storage of fuel oil within the confines of a building" said Chief Davis. "I hold this view upon principle, anticipating the possibility of breakage of oil lines, defects and leaks in the tanks themselves or during progress of a fire heavy objects falling and destroying tank or piping."

Water Mains and Fire Streams

The last paper of the morning session was presented by Fred Shepperd, Managing Editor of FIRE ENGINEERING. As indicated by the title, "Effective Fire Streams from Various Sized Mains", the subject was devoted to an analysis of the problem of securing effective fire streams from small diameter mains. Methods of effectively utilizing small flows were outlined, as well as methods of familiarizing fire department members with the

capabilities of hydrants throughout the water system. This paper will be printed in a later issue of FIRE ENGINEERING.

Mr. Mayer Addresses the Convention

Following the final paper of the session, Louis B. Mayer, Vice President of the Metro-Goldwyn-Mayer Corp., was introduced by President Armstrong, and he gave a very interesting talk on "The Fire Brigade," the motion picture sponsored by the Association. He urged the members to bear in mind that dramatic license is necessary in the production of motion pictures and that it is necessary at times to deviate from scientifically correct methods or operations in order to secure dramatic or melodramatic effects. The association gave Mr. Mayer a rising vote of thanks, and assured him of a hundred per cent cooperation.

Chiefs See "The Fire Brigade"

Probably the outstanding event at the New Orleans convention was the world's premier of "The Fire Brigade", the motion picture sponsored by the International Association of Fire Engineers. Practically the entire registered membership of the convention saw the picture.

The picture, which is not quite in finished form, received a warm reception and it seemed to be the consensus of opinion that there are big things in store for the film. The producers, The Metro-Goldwyn-Mayer Corporation, announced that nearly $200,000 more will be spent to make the picture a still bigger feature, and the burning of an entire city will be filmed as a climax.

At the New Orleans showing of the picture, practically all of the stars appearing in the play were present in person, each being called upon to speak from the stage. President Armstrong also delivered a short talk, extending to the producers and to the stars the thanks of the association. Each of the stars was made an honorary member of the organization and to each was given a gold membership badge.

Resolutions Passed

The following resolutions were passed by the convention

Whereas, In order to perpetuate the memory of our comrades who have paid the supreme sacrifice in defense of life and property against fire in the past, as well as for such events as may occur in the future, a memorial building should be provided by this association at some suitable site within its jurisdiction. This building could also serve as a bureau, for the use of all members of fire departments who may desire to visit the same, and where information pertaining to fire department matters of all cities within the jurisdiction of the association could be available. Therefore be it

Resolved, That it is the desire of the International Association of Fire Chiefs that an international memorial building and fire department bureau be established and maintained by this association on a site to be procured in a city to be selected, and be it further

Resolved, That the president of this association be and he is authorized and directed to appoint a standing committee consisting of three members of this association, whose duty it shall be to devise ways and means for raising the necessary funds for the establishment of this worthy project, and to promulgate rules setting forth its aims and objects.

Resolved, That in order to appropriately and effectively carry out the provisions of the resolutions adopted by this association providing for fire protection for the George Washington home at Mount Vernon, the president of this association be and he is hereby authorized and directed to appoint a committee consisting of three members of the association, to bring this matter to the attention of the proper authorities at Washington.

Whereas, One of the most interesting features depicting colonial days of our country and, from a patriotic historical view point, the greatest and most endearing to our people that is maintained by the Government of the United States, is that of the old home and grounds of our beloved "Father of our Country" and the first President of the Republic, George Washington, at Mount Vernon, Virginia. And,

Whereas, These buildings and their environs situated on the site, containing the original furniture and household relics of the Washington family, are of wooden structure and consequently of a highly inflammable nature and a most hazardous fire menace, the destruction of which by such means would be most deplorable, at the present time are entirely lacking in adequate fire protection. And,

Whereas, It is incumbent upon our government officials at Washington to see that every precaution is taken to efficiently safeguard and preserve these most sacred relics of the days of our struggles for freedom and independence from destruction by fire. Therefore be it,

Resolved, By the International Association of Fire Chiefs, in convention assembled, that more adequate fire protection should be provided for these buildings and grounds, such as a fully equipped and manned fire engine company, to be permanently stationed within the grounds, for the sole purpose of protecting this property against fire, said company to be selected from and be an adjunct of the Washington Fire Department, and to be under the jurisdiction of the Chief Engineer thereof. Be it further

Resolved, That these resolutions be spread upon the records of this convention proceedings and copies thereof to be forwarded to the President of the United States, the Senate and House of Representatives, and other government officials having jurisdiction in the matter.

Important Matters Taken Up on Friday

Friday's session of the convention was notable for several very important transactions. The first reports received were those of the Credential Committee and the committee on Vice-Presidents. These were adopted and ordered filed.

The next report was that of Chief William F. Daley, as chairman of the Exhibit Committee which was as follows:

Report of the Exhibit Committee

I hereby submit the following as the report of the Exhibit Committee for the 54th Annual Convention of the International Association of Fire Engineers, held at New Orleans, October 19-22, 1926:

Of the total of 18,514 square feet of space allotted to the convention exhibits in the U. S. Army Base Building, 16,463 feet, or practically 90%, were sold to various fire equipment manufacturers. There were 29 exhibitors in all, several of whom were at our convention for the first time.

At ten cents a square foot, the receipts for space sold amounted to $1,646.30. Added to this was $30.25 representing forfeitures of deposits by firms cancelling space reservations, making the total receipts for space $1,676.55.

Respectfully submitted,
WILLIAM F. DALEY,
Chairman of Committee on Exhibits.

October 22, 1926.

Chief Daley in this capacity has worked hard and faithfully to make this a feature of the convention, and the results showed that he also had worked successfully, as the exhibit was one of the best association has ever put on. A rising vote of thanks was tendered to Chief Daley in accepting the report.

Thanks to Stevens and Scott for Work on Picture

A rising vote of thanks was also tendered to Chief Ralph J. Scott, of Los Angeles, and to Jay Stevens, for their splendid work in connection with the motion picture, "The Fire Brigade," which had just been brought to a successful conclusion.

Important Amendments to Constitution Passed

The proposed amendments to the constitution were then taken up. The first of these, the proposal to change the last word in the name of the association from "Engineers" to "Chiefs" was unanimously carried, and the title now becomes "The International Association of Fire Chiefs."

The new membership plan was next adopted. This divides the membership into two groups—those attending the convention and those unable to do so. The dues for the attending members was fixed at five dollars and those for non-attending members, two dollars. The object of this amendment is to enable the chiefs membership into two groups—those attending the convention become members of the association, and it is expected will lead to a very large number of such chiefs joining the association.

Providing for Honorary Life Members

Another amendment provides for the election of those doing notable service to the association to honorary life membership. following the adoption of this amendment, the convention unanimously elected the following honorary life members:

Jay W. Stevens, State Fire Marshal of California, for his work as the association's representative in putting over the motion picture, "The Fire Brigade."

George F. Cobb, Boston, for his work as Traffic Manager.

I. H. Case, General Manager, Case-Shepperd-Mann Publishing Corporation, for work as chairman of the Membership and Publicity Committees.

Fred Shepperd, Editor of the *International Fire Chief*, and Managing Editor of FIRE ENGINEERING for his work in connection with the former publication.

Officers Elected

The election of officers resulted in the following:

President, Chief Thomas R. Murphy, San Francisco, Cal.
First Vice-President, Chief Ross B. Davis, Philadelphia, Pa.
Second Vice-President, Chief John M. Evans, New Orleans, La.
Secretary, Chief James J. Mulcahey, Yonkers, N. Y.
Treasurer, Chief Peter B. Carter, Collingswood, N. J.

Portland, Ore., Next Year

The convention city for 1927 is to be Portland, Ore., the convention having voted unanimously to go to the Pacific Coast next year.

The rules for the contest for the three Louis B. Mayer Trophies, to be awarded for proficiency in fire prevention by the association, were adopted.

(*For list of attendance, see page* 1112)

INDUSTRIAL PLANT PROTECTION

HOW CAN THE EXPENSIVE FACTORY FIRE BE AVOIDED?

Detecting the Fire Hazard in the Plant Will Reduce Fire Losses—Checking Up on Gas and Electric Appliances

By K. D. HAMILTON, Plant Engineer, Brockton, Mass., and R. S. MOULTON, Asst., Secretary, National Fire Protection Association.*

IN this article, continued from last issue, the authors go into the care and supervision of electric and gas appliances, and emphasize the importance of guarding against the fire hazards involved:

Static from Machines

Transmission equipment should be given constant supervision. Shafting may get out of line and cause over-heating of bearings, and if the bearings happen to be covered with lint or sawdust—for example, in wood-working plants—a fire may start.

Belts are a hazard, because of the possibility of friction with woodwork. Belt shifters should be carefully installed. Static electricity from belting is one of the serious hazards, especially where volatile solvents are used. In our plants we do not allow any belting to be used where there is danger from volatile solvent handling. Shafting is driven by direct-connected motors, through gears, or by chain drives.

Whenever static electricity is generated by belting, collectors should be installed to carry this electricity to a solid ground. A

Piles of Rubbish (Left) and Collection of Litter (Right).

metal comb can be employed to pick up static, and the shafting itself should be thoroughly grounded to some good conductor.

Static electricity has caused fires of very serious consequences. Static electricity which can be generated in the human body has been sufficient to start fires in the immediate vicinity of gasoline or of alcohol. Some human beings have a greater capacity for storing electricity than others. If you are having minor fires from static, you may be able to trace their orgin to certain employees.

There are numerous causes of electrical fires. Electric arcs which are frequently the cause of fires may originate from poor contacts, switches, poor splices in wiring, worn insulation, or crossed wires. Open knife switches may become burned and cause arcs when they are closed or opened. Windings on motors and generators frequently take fire because of overloading.

Heating units, especially electric irons, should be under the constant supervision of the electrical department. Provide all heating circuits with pilot lights, which burn whenever the circuits are in use, as a warning to the watchman or to the foreman to shut off the circuit before leaving the room.

Drop-cords on electric lights are a serious menace. Renew all frayed drop-cords. Do not allow employees to hang drop-cords from pipes or to drive nails between the wires to support cords from wooden partitions. Look over the receptacles and sockets for short circuits. One of our employees was seriously burned, because of the breakdown of a key socket on an electric-lamp fixture.

Incandescent lamps should be used with intelligence: and vapor-proof fixtures should always be installed in rooms where there is vapor, of either an explosive or moist nature. Use water-proof fixtures wherever there is dampness, to prevent the breakdown of the insulation.

* Reprinted from Factory.

Switchboards should be kept free from dust, because if dust is allowed to collect on contacts, a breakdown of the insulation may result. Poor contacts in transformers are trouble-makers. Do not allow operators to replace burned-out fuses with copper wire or "jumpers," with the excuse "so that we may get going again in a few minutes."

Carefully Supervise Gas Appliances

Make sure that appliances using gas are carefully supervised. Do not allow operators to leave the gas on. Do not allow operators to have rubber tubes connecting gas stoves or gas heaters. Pipe the equipment with flexible metal tubing, or with standard pipe and fittings, so that there is no possibility of broken joints. Every gas connection should have sufficient shut-off valves for safety in case of fire.

Be careful in using welding equipment of either the electric or the acetylene types.

Although the boiler-plant is generally constructed of fire-proof materials, fires often originate here.

Bituminous coal, especially when piled to heights of 15 feet or more, is liable to overheat. Keep coal piles away from buildings, so that in case of spontaneous combustion there will be an opportunity to shovel the pile over and thus extinguish the fire. Many a building has been destroyed because it was too near the coal pile.

Do not allow hot ashes to be dumped against wooden buildings.

In burning rubbish under boilers, there is danger of a blow-back which may cause a fire unless provision is made to take care of the gases by large combustion chambers, flues, and stacks. Hot flues are liable to ignite adjoining woodwork. Protest all woodwork around furnaces, retorts, kilns, and other heating apparatus. Use galvanized iron, asbestos, concrete, or masonry.

There are fires which cannot be accounted for without a great deal of study. The direction of the wind is important. I have known of cases where vapors of the heavier sort have been carried from the point of generation to a boiler-room, located many feet away. The fire traveled back three or four hundred feet to the source of supply.

And explosions! In addition to many common causes, such as careless smoking, and metal shoe nails striking against concrete floors, explosions may be caused by static electricity or by the transmission of heat rays. Many a chemical, in burning, developes a poisonous gas which is difficult to combat without special equipment. Pyroxylin compounds give off obnoxious fumes. Some burning materials provide their own oxygen through chemical reaction, and are extremely hard to extinguish by ordinary methods.

Guard Against Overheating

Check up all electrical apparatus, motors, generators, lights, shafting, belting, piping, and other mechanical equipments, for fire hazards through overheating. Small stuffing boxes on centrifugal pumps have started serious fires. Sometimes, where there is highly explosive vapor, lighting systems are put outside. Placing electric motors in a separate building, with a shaft extending through the wall, eliminates the motor hazard.

Water-cooling is used to carry away the frictional heat which generates in bearings.

Care should be taken, in installing forges, kilns, or driers, that they do not come in contact with woodwork, and that in case of fire they can be segregated from the rest of the plant.

Hot-air ducts, blower piping, and other equipment should be put in according to regulations, to eliminate any possibility of a fire generating from this source.

The increased use of fuel oil presents a fire protection problem. Have underground tanks, piping, and oil burners thoroughly approved by the various authorities, especially the insurance companies, before starting up operation.

Protect all work-benches where heat is employed in processes, so that they cannot take fire readily. A great many fires have started from electric irons, heating units, torches, electric soldering irons, and other equipment left connected after quitting time. Foreman should go about the rooms at closing time to see that all heating circuits are shut off.

(To be continued)

Ridgefield, N. J., Celebrates Anniversary—The members of the hook and ladder company in Ridgefield, N. J., celebrated their sixteenth anniversary.

View of the Ruins at the F. M. Sibley Lumber Company Fire, Detroit, Mich.

LARGE DETROIT LUMBER YARD DESTROYED IN ALL-DAY FIRE

10,000,000 Feet of Lumber and 16 Horses Lost in Blaze—Fireman Hampered in Work by Lack of Fire Hydrants

AN all day battle by the firemen of Detroit, Mich., under the leadership of Chief Edward Meginnity, was required to extinguish a blaze in the F. M. Sibley Lumber Company that resulted in a $500,000 damage. Five alarms were sounded and the fire was the most spectacular as well as the largest in recent years. There was little fire protection at the place, and it consisted of a few hand extinguishers—three hydrants were used by the fire department but they were so located as to make the use of long lines necessary. In addition water was also drafted from a nearby creek.

The fact that the fire occurred in a newly annexed section of the city accounts for the poor water facilities at the time of the fire. The nearest fire hydrant was 1,800 feet distant from the fire, and it was necessary to relay the water from pumper to pumper in order to obtain an adequate stream with sufficient pressure.

The lumber yard was considered the most modern in the state and also one of the largest. A barn about one hundred feet wide and five hundred feet long, in which the fire started, was burned to the ground. The fire was discovered at 5 a.m., and an alarm was immediately turned in. It was not long before five alarms were sounded and about half of the city fire force with equipment were fighting the lumber yard fire. The prompt work of the police in establishing fire lines prevented the loss of life and injury to the large crowds that gathered to watch the firemen. The various alarms brought fourteen pumpers, five ladder trucks, two rescue companies and one chemical company; 288 firemen were at work at the fire.

Because of the distance of the hydrants from the fire, 16,450 feet of hose were used. Most of the fire streams had 1¼-inch nozzles and there was thirty-five pound pressure at the hydrants.

After a thirty-hour battle, the men returned to their quarters. The department is at loss to account for the manner in which the blaze started, and the only theory that they deem plausible is that some tramps with matches camped near the lumber.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending October 8

LOGANSPORT, IND.—Buildings of Sider Broom Factory and Playford Manufacturing Company damaged..... 25
NORTH MILTON, N. Y.—Property on farm of Mrs. John Dee destroyed 40
BUFFALO, N. Y.—The Moffat Flour Mills, Inc., damaged.. 40
ASBURY PARK, N. J.—Plant of Jamesburg Ice Co. damaged 80
CHICAGO, ILL.—Joseph Brothers Lumber Company damaged. 25
WHEELING, W. VA.—Property at 1318-22 Main Street.... 65
MULDROW, OKLA.—Business establishments destroyed..... 50
BRIARCLIFF, N. Y.—Barn on estate of V. Everit Macy..... 40
BOWLING GREEN, OHIO.—Chidester Block destroyed..... 125
COXETOWN, PA.—Coxetown Hotel and two residences destroyed. 40
SAN ANTONIO, TEX.—Plant of San Antonio Oil Works damaged 80
BRUNSWICK, GA.—St. Simons Hotel and adjacent buildings.. 25
WEST CHESTER, PA.—Barn on William Yeasley farm destroyed. 25
SWANTON, VT.—Champlain Hotel on Maquam Road destroyed. 30
REDDING, CALIF.—Plant of the Buffalo Bottling Works destroyed 40
LAKE OKOBJI, IOWA.—M. E. Summer Camp and Cottages.. 30
WOBURN, MASS.—Plant of Winchester Brick Co. destroyed.. 80
SYRACUSE, N. Y.—Paul Tire Shop, 685 S. Salina St. destroyed. 80
OAKLAND, CALIF.—Union Pacific Laundry, 28th Street.... 40
TAYLOR, TEX.—Seed house of Travis Cotton Oil Company.. 80
WEST PATERSON, N. J.—Mills of Bender Box Products Company and Floral Silk Company destroyed..... 45
DANVILLE, Pa.—Machine and wood shops of Danville Iron & Steel Company..... 80
SALINA, UTAH.—Salina Roller Mills destroyed..... 25
CAMBRIDGE, IDAHO.—Three business establishments and adjoining property 25
HAMILTON, ONT...Plant of Canada Ice & Coal Company.... 80
PUEBLO, COLO.—Fountain Lake Hotel destroyed, four miles N. E. 50
RUSTON, LA.—Warehouse of Louisiana Oil & Refining Co.... 25
MAMMOTH, UTAH.—Business establishments and residences.. 80
ANTIOCH, CALIF.—Tug No. 5 owned by Fred Ball destroyed 25
MILWAUKEE, WISC.—Warehouse and garage of Lex Construction Co..... 30
LAKE PLEASANT, N. Y.—Home of Robert W. Stevens destroyed 40
CHICAGO, ILL.—Factory of Allen B. Wrisley Company..... 250
LOS ANGELES, CALIF.—Factory of Royal Packing Company. 65
FRUITA, COLO.—Block of business buildings destroyed..... 25

Week Ending Oct. 15

CHICAGO, ILL.—Dwelling at 3159 Hudson Avenue destroyed.. 30
CLEVELAND, OHIO—5th and 6th floors of White Sewing Machine Co 170
NEWPORT, R. I.—Convention hall, dining hall and cottages destroyed 80
NEWPORT, KY.—Main building of Geo. Wiedemann Company distillery 40
CODEN, ALA.—Rolston Hotel destroyed..... 25
LOS ANGELES, CALIF.—Dudley Hotel, 212 S. Broadway, damaged 25
SAVANNAH, MO.—Two business houses on public square destroyed 25
CLAYTON, N. C.—L. H. Johnston Hardware Bldg. and adjoining bldg., owned by Sidney Horne..... 75
MINDEN, NEBR.—Flour mill of Minden Milling Company destroyed 25
SALT LAKE CITY, UTAH.—Warehouse and elevator of Western Seed Marketing Company damaged..... 40
MOORESVILLE, N. C.—Main building of Mooresville Furniture Factory 25
PULASKI, TENN.—Warehouse of Harwood & Yancey Cotton Storage Co., and bldg. of Pulaski Citizen..... 50
SULPHUR SPRING, TEX.—General store of Berry Brothers.. 25
GLENDALE, CALIF.—Bentley Lumber Company and adjoining structures damaged..... 65
ROCHESTER, N. Y.—Building at 329 Smith St. occupied by business establishments 45
FORT STOCKTON, TEXAS.—Warehouse of Held Brothers..... 25
FALLS CITY, NEBR.—Business section damages..... 25
KLAMATH FALLS, OREG.—Barn on Edgewood Polo Ranch destroyed 65
CHILOQUIN, OREG.—Block of business buildings destroyed... 50
FLINT, MICH.—Barnett Clothing Store and Stanley & Adams Store 25
MONTREAL, CANADA.—Plant of Malcolm Condensing Company, St. George, destroyed..... 70
COXSACKIE, N. Y.—One building destroyed, four others damaged 25
LEXINGTON, KY.—Business building owned by Edw. Williamson 40
COOLEDGE, TEX.—Munger Cotton Oil and Gin Company plant 25
CHICAGO, ILL.—Reitz Lumber Company and Porter Lumber Company, adjoining, damaged..... 70
GRAND RAPIDS, OHIO.—Part of the Huffman Business block. 25
RYE, N. Y.—Buildings at Paradise Amusement Park destroyed. 220

CHICAGO, ILL.—Puritan Mill, Inc., damaged..... 80
CHICAGO, ILL.—Brady Garage, 403 W. Superior St., damaged 65
MILDRED, PA.—Several business buildings destroyed..... 25

Modern Fire Alarm Signaling

(*Continued from page* 1098)

the alarm back over all circuits. If at the time an alarm is being sent in, the coil first to operate will keep the line, and it will be impossible for the second alarm to interfere with the first. In an event of an open circuit occurring at any time the repeater will automatically lock that circuit out and keep all the rest in perfect working order. When the trouble has been cleared even with an alarm going through the machine it will automatically restore the circuit to working order. On the first blow or opening of the circuit, a small annunciator will drop and give notification of the circuit being used or of possible trouble. It is necessary to reset this annunciator by hand and it is impossible to do this until the function of the repeater has been fully completed. This is necessary in order to keep an operator from interfering with an alarm while in progress.

The operation of the repeater circuits by the repeating mechanism is accomplished by means of anvil type rubbing contacts of pure silver. These contacts are mounted on split phosphor bronze springs which work independently thereby insuring positive contact between opposing pairs. The operation of one magnet releases the repeating mechanism which opens the entire set of contacts and thereby repeats the signal over all circuits.

The alarm circuits are operated in the same manner as the circuit containing only the spring contacts with no coils to trip the repeater. This type of repeater may be obtained in any number of circuits, from four to sixteen circuits for boxes, and any number of closed alarm circuits desired. It is also possible to operate this repeater in a series position having all circuits in series or in multiple with each circuit independently operated. They are highly finished, protected from dust and moisture by an airtight glass case, and they seldom get out of order unless tampered with. There are twenty-two sequences of adjustments on this machine which are in unison with each other, and changing any one is apt to affect the others. For this reason it is not advisable for any one to attempt to adjust one. The Gamewell Company has at their factory a man who is an expert on all types and kinds of repeaters, and he is at the service of those who are willing to pay for his time. The repeater is too costly an instrument to attempt to repair if one is not acquainted with all the phases of its operation. Directions for oiling and adjusting the operating current, et cetera, will be found in the chapter on repairs.

Tapper Repeaters

The tapper or gong repeater is a little different than a box alarm repeater in that a single magnet trips the machine and the repetition of the signal is accomplished by the mechanism revolving and opening all the single circuit contacts. The master coil or magnet is actuated by the gong transmitter and each operation of the transmitter will also affect the tapper repeater. The timing of the tapper repeater is accomplished by a fan type governor and will be of the same time as the transmitter. These machines are not to be run faster than one blow a second as this time is necessary in order for the mechanism to operate. This machine is protected the same as the box alarm repeater, and the same rules on the repairing of it apply here.

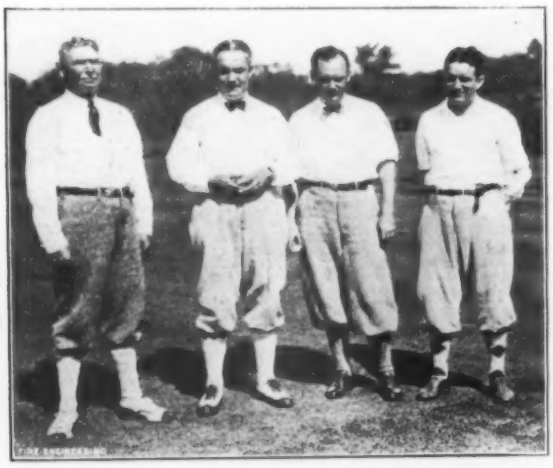
Joker Repeater

This machine is also called joker relay transmitter but as it serves to repeat the fast time signal over all engine house circuits it will be described here. The joker repeater differs from all other types of repeaters in that there is no train work or mechanism connected with it. A master relay is operated by the joker transmitter equipped with common contacts which operate all the independent relays. It is possible to operate this repeater at a high rate of speed and that is the reason why this type is used for this purpose. The adjustment of the relays are very fine, and if any adjustments are needed, it would be a wise plan to consult the manufacturers. This machine is also protected by a glass case and should be handled very carefully. All of these repeaters except the joker repeater may be had in hand or motor wind, and where possible a motor wind should be installed at first. The machines are weight driven and must be kept wound up; it is therefore a good idea to wind them up after every alarm.

Installation of Repeaters

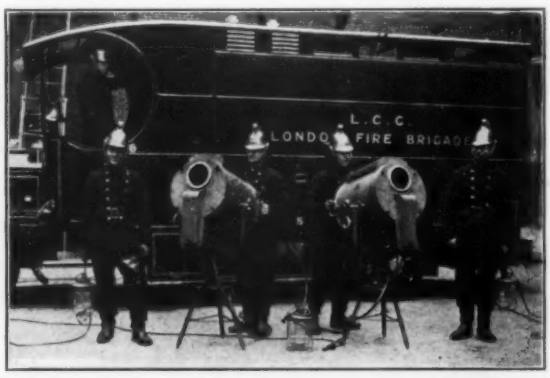
The size of the repeater should be taken into consideration when arranging a new office or placing a new machine in commission. If it is possible, the best place to place the repeater is in the center of the room where it is possible to readily see into all working parts. Never, under any circumstances, place the repeater in the same room with storage batteries as the fumes from the battery will be harmful to the safe operation of the machine. If it is necessary to put the repeater up against the wall, the face of the machine containing the annunciators and armatures should be facing the free space. Be sure the floor is of sufficient strength to sustain the added weight and that the room is clean and dry before placing the machine. All wiring to the various types of repeaters come up inside the bottom of the casing and either terminate at the under side of the base or pass up through binding posts or studs. It is necessary then to cut out holes in the floor through which to bring your conduit or loom. The protecting pipe or cable should run up inside the base as high as possible and the wires should be taped or laced up to their terminating points and the pipe or conduit entrance protected by a bushing or approved fitting.

On the standard type box alarm repeaters the wires are brought up inside the base and run through the terminals, and they are held fast by a set screw. Care should be taken at the time you run your wiring so that all terminals are tight and do not turn around. The posts are all marked and the wires coming from the storage battery switchboard or protector board should be placed in position in the order named. Care should be taken to keep the polarity correct. The machine should set



Chief Kenlon and His Golfing Family.

Chief John Kenlon of the New York city fire department, and his three sons, are all ardent followers of the little white pill. The picture of the chief and his sons, Walter, Gerald and Edwin, was taken at the golf links of the Englewood, N. J., Golf Club.



Equipment of the London Fire Brigade.

One of the special pieces of equipment of the London Fire Brigade is the flood light unit illustrated. It is provided with cluster lights for use inside of the building and flood lights to illuminate the exterior. At the bottom of the car is a coil of wire that connects the generators with the searchlights.

square and will perhaps have to be shimmed up to obtain this condition.

The other repeaters are installed in the same manner, the only difference being that the Joker repeater wiring terminates on the under side of the base. After installing the repeaters and hooking them up take a test lamp and place one lead on the train work of the machine and with the other lead test all the contacts and wiring, and should you find a ground, look over all the buss wiring on the top of the machine. Also examine all the metal spool covers magnet straps and all other metal parts where a ground might occur. Wipe off all parts of the repeater with a piece of dry cheesecloth and blow out all dust from the working parts, using extreme care to see that the cloth does not catch in any gears or in the levers. Care should be taken at this time to see that no springs are bent or broken and observe if the time train is running free and the time lever is restoring itself after every test.

The machine should not be allowed to run down as it will result in confusion, and the machine will be placed under stress if allowed to operate when the weight is run down. If a motor wind machine is supplied you it is necessary to supply the motor with 110 volts either A. C. or D. C., depending on the type motor used. Make sure the switch has good contact on the clips so as to keep the switch blade from falling out if the machine is winding at the time an alarm comes in.

Never bother a machine which is not actually giving you serious trouble and always keep a good watch over them to be able to see and describe its failings if such are true.

Troubles and Their Remedies

If repeater fails to operate when an alarm is sent through.

Machine is run down—wind up weights in machine.
Train time lever caught—release time lever.
Relay armature sticky—open case and look over relay; if armature is dirty or sticky clean up with croucus cloth or dental file.
Something in gearing—look over gearing and free stuck gear.
Machine out of adjustment—call expert from manufacturers; in the meantime adjust office for other method of operation.

If circuit opens and it is impossible to close it by cutting out the outside loop.

Relay coil is open—hook up circuit out of order with another repeater circuit and order a new coil from the makers. When it arrives, if you are capable of installing it proceed with the work, if not get expert from the company.
Contact fingers open—learn cause for keeping contact in open position and if possible fix the trouble yourself if of common nature, otherwise consult the makers.

If during time alarm is passing all circuits are opened and kept so.

Repeating mechanism stopped in an open position—before looking for trouble, if the alarm is not entirely finished, you should first make some preparations for transmitting the alarm and as a general rule some rule will be made in the department to take care of just such an emergency. Look for a small piece of rag or a broken gear tooth or anything that would cause the machine to stop in an open position.

If machine slams when it turns over.

Too much weight—too much weight on weight drive and it will be necessary to take some of the weight off. This is not a common occurrence.

If machine runs jerky.

Fan loose, or box out of time—fans have become loosened and turned, putting the machine out of time. It will be necessary to retime the machine.
Box transmitting its signal is out of time or not of the same time as the repeater; correct this fault by retiming the box.

Annunciator stays down.

Holding clip weak—put more tension on the holding clip and see if it holds in position.

Adjustments of a repeater are not given here as it would perhaps be a medium for entertaining trouble. As mentioned before, the repeater is too costly a machine to fool with or to experiment with, and for this express reason the adjustments are not given. Wiring diagrams are furnished with every repeater and all wiring should be attached as shown. When ordering a repeater it is a good idea to get one with at least two spare circuits as they can always be used at a time in the future.

The next article will take up punching registers, both old and new types, inking registers, time stamps and their wiring diagrams. Questions will be answered free of charge in the order received.

EX-CHIEF BYWATER, SALT LAKE CITY, PASSES AWAY AFTER LONG ILLNESS

**Four Times Chief of City—
Past-President of I. A. F. E.—
Resigned in 1925 After Strike**

WILLIAM H. BYWATER who was chief of the Salt Lake City, Utah, fire department on four different occasions, and a past-president of the International Association of Fire Engineers, died on October 6 following an illness of several months.

He was born in Sheffield, England, on June 27, 1859 and migrated to Salt Lake City while still a young man. Chief Bywater joined the department in 1888 and later when the city's fire alarm system was completed, he was appointed to be in charge. This position he filled for several years; he was hoseman and engineer at various times, and in 1904 he was appointed chief of the department. He was succeeded by another in 1906, and served as an engineer up to 1912, when he was re-appointed chief on January 27, 1920, and again in 1921.

The Late William H. Bywater.

Chief Bywater was in charge of the department until June 30, 1925, when he tendered his resignation following a strike among the members of the fire department. The strike was a topic of interest among the fire chiefs throughout the country at that time. He was succeeded by Chief Walter S. Knight, who formerly was assistant chief.

Chief Bywater served as president of the International Association of Fire Engineers in 1923, and he was active in the affairs of the association for several years.

Chief Bywater was twice married—his first wife died several years ago, and he also lost his second wife. He is survived by two sons, William A., and George E., and a daughter Mrs. Leon Davis.

FIRE MARSHALS OF N. AMERICA HOLD CONVENTION IN MEMPHIS

**Tracy of Iowa New President—
Large Fire in Progress as
Delegates Meet at Dinner**

ABOUT seventy-five delegates assembled for the annual convention of the Fire Marshals' Association of North America held in Memphis, Tenn., during October 13-15.

The welcome to the city was extended by Mayor Rowlett Paine. At one of the meetings, Chester E. Johnson of Montgomery, state fire marshal of Alabama and president of the association said, "Prevention of fire is the most important part of the public service of a fire marshal. Education will accomplish that which law can not." It was brought out during the course of the discussion that the fire marshal has many problems to contend with, such as indifferent public officials, poor legislation, lack of co-operation in official circles, and other contributory causes that tend to make the prosecution of arson cases difficult.

Thomas H. Allen, fire and police commissioner of Memphis, gave a graphic history of the development of fire prevention work in the city. He called the attention of the delegates to the fact that legislation was being introduced for reducing the hazards resulting from the use of gasoline, the shingle roof and other common hazards. The commissioner praised the work of the Chamber of Commerce and other assisting agencies for the reduction of the city's losses. An arson squad of the police department was organized.

(*Continued on page* 1122)

Those Who Attended the Chiefs' Convention

ALABAMA

J. L. Akin, Chief, Birmingham.
E. C. Beatty, Chief, Tuscaloosa.
J. W. Blakely, Chief, Selma.
L. B. Hill, Chief, Bessemer.
S. A. Middleton, Chief, Birmingham.
R. E. Nixon, Chief, Montgomery.
D. C. Rainwater, Chief, Anniston.
August Rhem, Chief, Mobile.
W. H. Sorber, Chief, Albany.
W. W. Stephen, Oxford.
Donald White, Chief, Florence.

ARKANSAS

M. J. Brun, Chief, Ft. Smith.
Chas. S. Hafer, Chief, Little Rock.
C. T. Sullivan, Chief, Helena.
W. A. Thomas, El Dorado.

BRITISH COLUMBIA, CANADA

John Aitken, Chief, London.
J. H. Carlisle, Chief, Vancouver.
W. A. White, Regina.

CALIFORNIA

L. Almgren, Chief, San Diego.
Chas. W. Anderson, Chief, Sacramento.
O. Z. Bailey, Chief, Oakdale.
Jack Brammer, Chief, Madera.
E. F. Coop, Chief, Pasadena.
Wm. Clemo, Chief, Palo Alto.
Wm. P. Cooper, Chief, Richmond.
Walter E. Culver, Chief, Piedmont.
M. J. Dunphy, Chief, Sacramento.
Claude M. Hirschey, Hillsborough.
John H. Mockbee, Mt. View.
T. R. Murphy, Chief, San Francisco.
D. J. Noonan, Chief, Vallejo.
W. E. Parker, Chief, Monterey.
G. Sydney Rose, Chief, Berkley.
M. E. Ryan, Chief, Redwood City.
E. Steinhauer, Chief, Redding.
Walter F. Steinmitz, Alameda.
John O. Sherman, Pamona.
R. J. Scott, Chief, Los Angeles.
S. H. Short, Chief, Oakland.
Jay W. Stevens, Ex-Chief, San Francisco.

COLORADO

J. F. Healy, Denver.
P. D. McCartin, Colorado Springs.

CONNECTICUT

Geo. Bogardus, Chief, Norwalk.
Frances P. Dunnigan, Chief, Westport.
Timothy J. Fitzgerald, Chief, Naugatuck.
J. H. Heitman, Chief, Waterbury.
G. W. Hoadley, Ex-Chief, Naugatuck.
D. E. Johnson, Chief, Hartford.
John C. Moran, Chief, Hartford.
Wm. F. Noble, Chief, New Britain.
L. E. Reif, Chief, New Haven.

DELAWARE

Wm. J. Lutz, Chief, Wilmington.

FLORIDA

Geo. O. Adicks, Lake City.
Guy Arendell, Chief, Lakeland.
W. Bickler, Pensacola.
E. F. Beville, Chief, Gainesville.
M. N. Cleveland, Chief, Sanford.
W. H. Coleman, Chief, Miami.
T. P. Coe, Chief, Tallahassee.
Wm. Dean, Chief, Orlando.
W. E. French, Daytona Beach.
C. P. Founand, Chief, St. Augustine.
C. L. Gravitt, Chief, Haines City.
Albert W. Harris, Chief, Bradenton.
Ed. C. Henshaw, New Smyrna.
R. N. Hershey, Chief, Hollywood.
B. B. Hart, Chief, Daytona.
J. B. Holton, Chief, Tampa.
A. E. Knowles, Chief, Tarpon.
H. M. Knowles, Chief, Sarasota.
J. T. McNulty, Chief, St. Petersburg.
M. P. Lehman, Chief, Coral Gables.
H. R. MacMillan, Chief, Jacksonville.
F. C. Pfaender, Chief, Winter Haven.
R. B. Pinder, Chief, Key West.
J. L. Quimby, Chief Hialeah.
C. A. Ross, Chief, Wauchula.
C. R. Revout, Chief, Ft. Myers.
E. E. Reid, Chief Lake Worth.
A. P. Sadler, Chief, West Palm Beach.
Chas. D. Toole, Chief, Vero Beach.

GEORGIA

W. S. Blanton, Chief, Macon.
D. W. Brosnan, Chief, Albany.
W. B. Cody, Chief, Atlanta.
Thos. M. Cook, Jr., Valdosta.
D. B. Copeland Chief, Columbus.
C. W. Corliss, Chief, La Grange.
W. B. Cummings, Atlanta.
H. A. Gilbert, Chief, Newman.
J. B. Hunt, Chief, Moultrie.
John B. Kennedy, Chief, Augusta.
John H. Monroe, Chief, Savannah.
Robt. L. Pringle, Chief, Atlanta.
J. J. Powell, Chief, Griffin.
H. B. Rich, Chief Bainbridge.
H. L. Taylor, Chief, Rome.

ILLINOIS

J. V. Balz Chief, Waukegan.
James E. Beaman, Chief Naval Training Station, Great Lakes.
Thos. D. Blake, Chief, Rockford.
Oliver P. Bozarth, Chief, West Frankfort.
J. E. Cooney, Chief, Carbondale.
Edw. L. Clayton, Chief, Benton.
James Downey, Chief, Fairfield.
John Ely, Chief, Champaign.
Edw. C. Haskin, Chief, Highland Park.
John O. Hawk, Chief, Moline.
E. F. Henryson, Chief, Elgin.
Albert Herring, Chief, Murphysboro.
A. H. Hofstetter, Chief, Evanston.
G. M. Houren, Chief, Winnetka.
Peter Lind, Chief, Cairo.
Herman J. Lohman, Chief, Aurora.
Hartha Johnson, Chief, Herrin.
G. C. Marriott, Chief, Quincy.
Jeremiah McAvliffe, Chicago.
F. C. McAuliffe, Chief Fire Patrol, Chicago.
Ed. Platt, Chief, Decatur.
C. W. Royce, Chief, Joliet.
August Schmidt, Chief, Rock Island.
Theo. E. Simmons, Chief, Danville.
James Swain, Marion.
O. D. Smith, Mt. Vernon.
James J. Wheeler, St. Louis.
Harry Warren, DuQuois.
E. D. Yeck, Florian.

INDIANA

Chas. G. Alford, Chief, Anderson.
Irwin C. Bauman, Chief, Michigan City.
Wm. Briggs, Chief, Shelbyville.
O. D. Cox, Noblesville.
Thomas R. Johnstone, Ex-Chief, Indianapolis.
John S. Kraft, Chief, New Albany.
C. C. Lampmann, Chief, Whiting.
John C. Leucks, Ex-Chief, Indianapolis.
R. A. Knoblock, Chief, So. Bend.
Frank H. Miller, Chief, Terre Haute.
Archie McCabe, Chief, Muncie.
E. E. Miller, Chief, Richmond.
Arthur M. Newton, East Chicago.
Jerre A. Hutull, Chief, Indianapolis.
Marshall Potts, Chief, Mishawauka.
Frank Parkey, Chief, Gary.
John C. Stalhut, Chief, Ft. Wayne.

IOWA

J. J. Brown, Chief, Muscatine.
H. J. Callahan, Chief, Fort Dodge.
James Cotter, Chief, Council Bluffs.
Peter Denger, Chief, Davenport.
Joe W. Fisher, Chief, Dubuque.
Geo. M. Kellogg, Chief, Sioux City.
James Kennedy, Chief, Cedar Rapids.
Ray Tiller, Chief, Waterloo.

KANSAS

A. S. Broumewell, Chief, Wichita.
W. A. Buel, Chief, Parsons.
Olander Lind, Chief, Kansas City.
P. L. Noble, Chief, Manhatten.
Wm. F. Reinisch, Chief, Lawrence.
Willis Rodgers, Chief, Ottawa.
Gus Tessmer, Pittsburg.
Jos. Waidelich, Chief, Topeka.

KENTUCKY

A. Bache, Chief, Louisville.
E. E. Cureton, Chief, Owensboro.
Edw. A Griffith, Chief, Covington.
Burris Hensley, Chief, Ashland.
W. A. Jesse, Chief, Lexington.
Lee Roberts, Chief, Fulton.
J. N. Slaughter, Chief, Paducah.
J. F. Williams, Chief, Fulton.

LOUISIANA

R. A. Bogan, Chief, Baton Rouge.
Fred A. Baumgarten, Chief, Lake Charles.
A. J. Bethancourt, Chief, Houma.
John M. Evans, Chief, New Orleans.
A. O. Eastman, Chief, Jennings.
E. M. Houillon. Chief, Donaldsonville.
J. W. Miles, Chief, Crowley.
G. E. Martin, Chief, Haynesville.
R. A. Neff, Chief, Alexandria.
Felix Penes, Chief, Rayne.
H. J. Rapp, Ex-Chief, Gretna.
Frank J. Roddy, Chief, Monroe.
O. J. Sherman, Chief, Bogalusa.
B. F. Turner, Sr., Chief, Minden.

MAINE

Eugene T. Ricker, Chief. Biddleford.
O. T. Sanborn, Chief, Portland.

MARYLAND

R. L. Hoenicka, Chief, Cumberland.

MASSACHUSETTS

Selden R. Allen, Chief, Brookline.
W. H. H. Atkins, Chief, Marblehead.
James M. Casey, Chief, Cambridge.
Edw. F. Dahill, Chief, New Bedford.
Wm. F. Daley, Chief, Brocton.
Frank L. Floyd, Ex-Chief, Manchester.
Wm. H. Hill, Chief, Belmont.
Patrick J. Hurley, Chief, Holyoke.
Hy J. Hyatt, Chief, Fitchburg.
Geo. L. Johnson, Chief, Waltham.
E. B. Jones, Chief, W. Springfield.
Herbert E. King, Chief, Mansfield.
Michael McPhee, Chief, Lawrence.
Thos. H. Mahoney, Chief, Westfield.
Chas. L. McCarthy, Chief, Worcester.
A. Montmeny, Chief, Chicopee.
John T. Nicolls, Chief, Malden.
John W. O'Hearn, Chief, Watertown.
Philip Partenheimer, Chief, Greenfield.
E. F. Saunders, Chief, Lowell.
D. F. Sennott, Chief, Boston.
W. C. Sheppard, Chief, Pittsfield.

MICHIGAN

N. Belfy, Chief, Muskegon.
M. J. Bishop, Chief, Royal Oak.
Geo. Boughner, Chief, Grand Rapids.
C. H. Crampton, Chief, Bay City.
Geo. F. Dansbury, Chief, Grosse Pt. Farms
F. E. Ford, Chief, Highland Park.
G. F. Giasson, Chief, Wyandotte.
Richard Holmes, Chief, Grosse Pt. Park.
A. M. Jaeger, Chief, Ecorse.
Walter Krzyzortan, Chief, Hamtramck.
Frank M. Kuhn, Chief, Pontiac.
Edw. J. Meginnity, Chief, Detroit.
R. E. Mottesheard, Chief, Ferdson.
Edw. H. Price, Chief, Flint.
Wm. G. Olsen, Chief, Birmingham.
P. O. Riddle, Chief, Caso.
J. A. Sullivan, Chief, Melvindale.
Geo. W. Smith, Chief, Ferndale.
Frank Schaller, Chief, Port Huron.

MINNESOTA

Ben C. Bangerten, Chief, Mankato.
O. C. Dunn, Chief, St. Paul.
Ald. Frank E. Gisbenhain, Minneapolis.
Alex Larson, Albert Lea.
Jos. Randall, Chief, Duluth.
C. W. Ringer, Chief, Minneapolis.

MISSISSIPPI

F. A. Baine, Chief, Canton.
Sam Bellfanni, Chief, McComb.
E. A. Donovan, Chief, Greenville.
R. E. Frank, Chief, Columbus.
Joe Fox, Chief, Leland.
Grisbarthes, Chief, Biloxi.
J. M. Gory, Chief, Greenwood.
R. L. Keyes, Chief, Laurel.
L. F. McDonald, Chief, Jackson.
R. W. Maxwell, Chief, Clarksdale.
W. F. C. Partin, Chief, Meridian.
J. E. Norsworthy, Chief, Hattiesburg.
E. F. Thompson, Chief, Gulfport.
J. W. Wilkes, Chief, Vicksburg.

MISSOURI

Chas. Alt, Chief, St. Louis.
J. C. Egner, Chief, Kansas City.
W. R. Price, Chief, Springfield.
Horace G. Regan, Chief, St. Joseph.

NEBRASKA

Martin J. Dineen, Chief, Omaha.
Louis Hansen, Chief, Lincoln.

NEW HAMPSHIRE

Jas. S. Smith, Chief, Nashua.
Arthur W. Spring, Chief, Laconia.
F. M. Sargent, Chief, Sunnapee.

NEVADA

R. B. Hawcroft, Chief, Reno.

NEW JERSEY

Aaron E. Baker, Chief, Maplewood.
John J. Barnett, Chief, Atlantic City.
Harry J. Becker, Chief, South Orange.
Ernest G. Beckert, Chief, West New York.
R. H. Bowker, Chief, Passaic.
H. W. Breder, Chief, Egg Harbor.
A. T. Callahan, Chief, Harrison.
Peter B. Carter, Chief, Collingswood.
Albert Chamberlain Chief Hillside.
S. B. Conver, Chief, Ocean City.
Thos. L. Coyle, Chief, Patterson.
E. N. C. Davis, Chief, Haddon Heights.
F. C. Decker, Chief, Westfield.
Wesley J. Dunn, Chief, Plainfield.
Harry J. Francis, Chief, New Brunswick.
Aug. Gerstung, Chief, Elizabeth.
J. Gibba, Chief, Montclair.
John J. Gilday, Chief, Hoboken.
S. A. Gruver, Madison.
W. B. Gilbert, Chief, Cape May.
Chas E. Hull, Chief, Andulan.
Wm. F. Ingold, Chief, Edgewater.
T. Howell Johnson, Ex-Chief, Bloomfield.
B. R. Mascutello, Chief, Long Branch.
E. H. McAllister, Chief, Morristown.
Jeremiah McGill, Chief, Trenton.
James J. McMillan, Chief, Orange.
Geo. L. Mitchell, Ex-Chief, East Orange.
C. L. Nickerson, Chief, Wildwood.
W. S. Noble, Chief, Red Bank.
K. F. Pierce, Chief, Kearny.
Adam A. Ritter, Chief, Clifton.
Fred E. Robertson, Ex-Chief, Summit.
Fred W. Schier, Chief, Union City.
James J. Sheehan, Chief, West Orange.
Chas. W. Greenfield, Chief, Kearny.
Harry T. Litts, Chief, N. Plainfield.
Frank P. Smith, Chief, East Newark.
J. W. Sutphen, Chief, Newark.
John J. Towey, Chief, Newark.
T. R. Wilson, Chief, Madison.
Wm. Zeigler, Chief Hackensack.

NEW YORK

Phil Baker, Ex-Chief, Port Chester.
Geo. M. Bower, Chief, Rome.

John Carlson, Ex-Chief, Depew.
C. A. Case , Chief, Troy.
Aug. G. Derra, Chief, Schenectady.
F. H. Eernewein, Chief, Oneida.
John H. Espey, Chief, Elmira.
C. G. A. Fischer, Chief, Ellenville.
W. E. Gaffney, Chief, Watertown.
W. J. Gates, Chief, Gl ns Falls.
John Gibson, Chief, Mont.
J. H. Golden, Chief, Cohoes.
Chas. Huber, Chief, Endicott.
G. W. Hedden, Chief, Buffalo.
F. A. Jaynes, Chief, Rochester.
A. H. Lyon, Chief, Binghamton.
Jes. L. Murphy, Chief, Kingston.
Ed. A. Ric , Chief, Freeport.
W. M. Seely, Chief, Middletown.
J. J. McKenna, Chief P. R. R., Penn. Station, New York City.
Chris W. Noll, Chief, Poughkeepsie.
R. C. Ruckoldt, Chief Eastman Kodak Co., Rochester.
Frank Ryszka, Chief, Lackawanna.
J. N. Sullivan, Chief, Utica.

NORTH CAROLINA

Frank W. Bennett, Chief, Durham.
G. S. Barnhill, Fayetteville.
Dr. A. E. Brannock, Chief, Lexington.
John L. Feister, Chief, Chapel Hill.
I. U. Styron, Chief, Morehead City.
Frank D. Shaw, Chief, Greensboro.
A. B. Horney, Chief, High Point.
A. L. Lancaster, Chief, Wilson.
W. P. Neister, Chief, Spencer.
H. E. Nissen, Chief, Winston-Salem.
Chas. Schnibben, Chief, Wilmington.
Frank D. Shaw, Chief, Greensboro.
M. M. Wallace, Chief, Charlotte.
H. E. Whitaker, Chief, Hickory.

NORTH DAKOTA

J. W. Sutherland, Chief, Fargo.

OHIO

T. F. Connell, Chief Fire Prev. Bureau, Cleveland.
James B. Fitton, Chief, Bellaire.
T. J. Gough, Chief, Cuyahoga Heights.
Barney J. Houston, Chief, Cincinnati.
S. F. Hunter, Chief, Springfield.
Harry A. King, Chief, E. Cleveland.
Garrett Kidney, Ind. Chief, Martin's Ferry.
R. O. Mesnar, Chief, Canton.
J. C. Moore, Chief, Martin's Ferry.
Geo. A. Wallace, Cleveland.

OKLAHOMA

S. C. Boaz, Chief, Henryetta.
W. M. Collier, Chief, Sapulpa.
Fred Harvey, Chief, Nowata.
R. J. Haymes, Chief, Claremore.
Tom Lyle, Chief, Okmulgee.
Geo. P. L. McKinney, Chief, Normer.
J. R. Pence, Chief, Headlton.
Sim Sheppard, Chief, Lawton.
J. E. Taplin, Chief, Blackwell.

ONTARIO, CANADA

James Armstrong, Chief, Kingston.
R. Burnett, Chief, Ottawa.
Jos. Fowler, Chief, Sudbury.
W. T. James, Chief, Hamilton.

OREGON

Lee G. Holden, Chief, Portland.

PENNSYLVANIA

A. E. Anderson, Chief, Bethlehem.
M. E. Clark, Chief, Williamsport.
Ross B. Davis, Chief, Philadelphia.
A. G. Dolby, Chief, Oil City.
Elmer Faust, Chief, New Brighton.
Geo. S. Fehr, Chief Freedom.
Chas. Hy. Henderson, Chief, Bradford.
F. Hochreiter, Chief, Wilkes-Barre.
M. J. Quinn, Chief, McKeesport.
Peter J. Rosar, Chief, Scranton.
Chas. Stewart, Chief, Ford City.
Richard Lee Smith, Chief, Pittsburgh.
R. T. Timmons, Chief. Beaver Falls.
Lawrence Tranior, Chief, Duquesne.
I. S. Zorb, Chief, Butler.

QUEBEC

L. Donnelly, Chief, Quebec City.
Raoul Gauthier, Chief. Montreal.
A. Tessier, Chief, Hull.

RHODE ISLAND

Robert Browning, Chief, Central Falls.
Frank Charlesworth, Chief Providence.
A. J. Cote, Chief, Woonsocket.
Irving F. Patt, Ex-Chief, Central Falls.
H. D. Weeks, Ex-Chief, Providence.
Raubert O. Weeks, Chief, Providence.

SASKATCHEWAN, CANADA

Thos. E. Eath, Chief, Saskatoon.

SOUTH CAROLINA

Louis Behrens, Chief, Charleston.
R. B. Bryant, Chief Gaffney.
F. E. Donnald, Chief, Greenville.
F. M. McConnel, Chief, Anderson.
H. B. Wells, Chief, Newberry.

SOUTH DAKOTA

Wm. A. Sloan, Chief, Sioux Falls.

TENNESSEE

Wm. Ahern, Memphis.
Sam B. Boyd, Chief, Knoxville.
W. R. Collin, Chief, Bristol.
E. T. Holman, Chief, Nashville.
W. I. Stoner, Chief, Lookout Mt.
J. W. Weaver, Chief, Nashville.
N. E. Whaley, Chief, Johnson City.
D. L. Wright, Chief, Old Hickory.
Ed. Wall, Chief, Covington.
B. L. Warwick, Chief, Jackson.

TEXAS

E. V. Easterling, Chief, Del Rio.
S. Ferguson, Chief, Ft. Worth.
E. L. Keith, Chief, Corsicana.
J. R. Meers, Chief, Waco.
Geo. F. Rexses, Chief, Orange.
C. L. Woodward, Chief, Austin.
John W. Wray, Chief, El Paso.

VIRGINIA

R. Alexander, Chief, Portsmouth.
Roscoe A. Foster, Chief, Navy Yard.
J. B. Gordon, Chief, Newport News.
W. H. Joynes, Chief, Richmond.
C. C. Meador, Chief, Roanoke.
L. F. Mitchell, Chief, Danville.
F. H. Wheeler, Chief, Clifton Forge.

WASHINGTON

Joe Wood, Chief, Routon.

WEST VIRGINIA

James L. Guthree, Chief, Beckley.
Ed. A. McGranahan, Chief, Wheeling.

WISCONSIN

Clarence E. Gillen, Chief, Racine.
C. W. Heyl, Chief, Madison.
Geo. P. McGillan, Chief, Appleton.
Ole Norman, Chief, Superior
J. J. Schwartz, Chief, Kenosha.
P. B. Steinkellner, Chief, Milwaukee.
Wm. R. Trotter, Chief, Sheboygan.
James P. Welsh, Chief, Eau Claire.

WYOMING

Joe T. Cahill, Cheyenne.
Percy Hoyt, Ex-Chief, Cheyenne.
Frank J. Stroh. Sturgeon Bay.
Jodie Moss, Chief, Paris.
Thos. A. Myers, Chief, Dallas.
P. Mayer, Ex-Chief, Corsicana.
S. D. O'Connor, Chief, Beaumont.
C. L. Pittman, Chief, Mexia.
John Rowsey, Chief, Greenville.
L. G. Sarren, Chief, San Antonio.
W. J. Springer, Chief, Texarkana.
M. P. Burns, Chief, Tyler.
J. J. Collins, Chief, Cisco.
J. W. Dellinger, Chief, Taylor.
F. J. Ferrier, Chief, Abilene.
A. W. Himssell, Chief, Eastland.

NEW ENGLAND FIRE CHIEFS GO TO NEW ORLEANS SIXTY STRONG

Big Party of Department Heads and Their Families Journey Together to Convention—Banquet on Monday Evening

A PARTY of sixty fire chiefs from the New England states made the trip from Boston to New Orleans in a special train. The start was made from the North Station, Boston, at 2 p. m. on Saturday, October 16.

The route was by the Boston and Maine Railroad to Troy, thence to Albany and by the New York Central Lines to Cleveland and by the Big Four and C. C. C. and St. L. Railway as a section of the Southwestern Limited, transferring to the Illinois Central tracks at Mattoon. The train arrived at the Union Station in New Orleans at 8 a. m., Monday, October 18, having made a record time over the Mississippi Valley route and being fully two hours ahead of the anticipated schedule.

The delegation was composed of members of the Fire Chiefs' Club of Massachusetts and the New England Association of Fire Chiefs and was headed by Chief Patrick J. Hurley, of Holyoke, president of the Fire Chiefs' Club and by Chief John W. O'Hearn, of Watertown, Mass., secretary of the association.

George F. Cobb, of Boston, traffic manager of the club, was in direct charge of the party and made all the arrangements for railroad and hotel accommodations in his usual efficient manner.

The train consisted of three Pullman sleeping cars, club car, dining car, and observation sleeper. The trip proved enjoyable and Chief Arthur Montmeny, of Chicopee, Mass., added to the merriment by his rendition of the popular French song "Alouette" while the chiefs in the club car joined voiciferously in the chorus. Chief George Johnson, of Waltham, was on hand with a bunch of new stories to amuse the crowd.

Among those in the delegation were the following:

Chief Daniel F. Sennott, of Boston, with Mrs. Sennott and Miss Katherine R. Sennott; Supt. E. E. Williamson and Mrs. Williamson, of Boston; Chief Oliver T. Sanborn, of Portland, Me.; Chief Arthur W. Spring, of Laconia, N. H.; Chief James E. Smith, of Nashua, N. H.; Ex-Chief Reuben D. Weeks, of Providence, R. I.; Mrs. R. D. Weeks, and Mrs. J. M. Weeks; William A. Tigbe, of Boston; H. W. Tracy, of Boston; Chief E. M. Sargent, Sunapee, N. H.; Chief William C. Shepard and Mrs. Shepard, of Pittsfield, Mass.; Chief E. F. Ricker, of Biddeford, Me.; Chief Philip Partenheimer, of Greenfield, Mass.

Chief I. F. Patt, Central Falls, R. I.; Chief John W. O. O'Hearn, Watertown, Mass.; Chief J. T. Nicolls and Mrs. Nicolls, Malden, Mass.; T. A. Newhall, Lynn, Mass.; Chief T. H. Mahoney, Westfield Mass.; Chief Homer R. Marchant, Gloucester, Mass.; Chief Charles L. McCarthy and Mrs. McCarthy, Worcester, Mass.; Chief Michael McPhee, Lawrence, Mass.; Chief Arthur Montmeny, Chicopee, Mass.; Chief H. E. King and Mrs. King, Mansfield, Mass.; Chief George L. Johnson, Waltham, Mass.; Chief E. B. Jones, West Springfield, Mass.

Chief Frank Charlesworth, Providence, R. I.; Chief A. J. Cote, Woonsocket, R. I.; Chief Patrick J. Hurley, Holyoke, Mass.; Capt. L. W. Carter, Manchester, Mass.; Chief Robert Browning and T. Browning, Central Falls, R. I.; Mrs. H. W. Arnold, Providence, R. I.; Chief Selden R. Allen, Brookline, Mass.; Chief W. H. H. Atkins, Marblehead; Chief W. H. Hill, Jr., Belmont, Mass.

Chief H. J. Hyatt, Fitchburg, Mass.; J. F. Gorham, Boston; Harry Belknap, Boston; Chief W. C. Green, Concord, N. H.; Supt. William H. Guertin, Worcester, Mass.; Ex-Chief Frank L. Floyd, Manchester, Mass.; Justin Edwards, Boston; Chief David A. DeCourcey, Winchester; Chief Edward F. Dahill, New Bedford, Mass.; Harry Carlow, Taunton, Mass.; Chief James M. Casey and Mrs. Casey, Cambridge, Mass.; Chief Edward F. Saunders, Lowell, Mass.; and Harry Lovell, of Boston.

When the party left Boston photographers from the newspapers were present and shortly before the time of departure took group pictures of the chiefs grouped about the front of the locomotive. Among those who saw the party off were Lieutenant Carl Bowers and Lieutenant John F. Goode, aids to Chief Sennott, of Boston; and P. Hildreth Parker, of Belmont, one of the directors of the Box 52 Association of Boston.

Chief John C. Moran, of Hartford, Conn., Chief Lawrence E. Reif, of New Haven, Conn., and several other chiefs from western and southern New England came south with the Eastern Regulars from New York. District Chief E. W. Williams, of Lynn, Mass., made the trip by motor. Chief William F. Daley, of Brockton, chairman of the exhibit committee of the International Association of Fire Engineers, went to New Orleans several days in advance of the convention.

The New England chiefs were comfortably situated in rooms at the Hotel Roosevelt in New Orleans where accommodations had been reserved by Traffic Manager Cobb. Many of the chiefs took motor drives about the the city and environs, visiting the parks, old French quarter, waterfront, museums, and other points of interest in the Crescent City.

Among the sights that interested the party on the railroad journey southward were the view from the high bridge over the Ohio River and a cotton gin and press in operation at a siding where the train stopped for water.

The New England chiefs, as usual, took a leading part in the convention sessions. Chief Selden R. Allen, of Brookline, made the reply to addresses of welcome; Chief John C. Moran, of Hartford, Conn., told of the traffic signal arrangement in his city; and Chief Charles L. McCarthy, of Worcester, read a paper on "Handling Fires in Three-Decker Tenement Houses".

On Monday evening, October 18, a pretty banquet was held in the Fountain Grill of the Hotel Roosevelt. The dinner was given by Harry J. Lovell, of the Boston office of the American-LaFrance Fire Engine Company, in honor of the 33rd wedding anniversary of Chief and Mrs. James M. Casey, of Cambridge, Mass. A huge bouquet of 33 pink roses was presented to Mrs. Casey, Chief Allen, of Brookline, making a short speech to express the good wishes of the assembled guests. Chief Casey thanked the chiefs in behalf of himself and wife and said he hoped others might enjoy such an ideal and happy married life as it had been his good fortune to enjoy.

The guests at the dinner were:

Chief and Mrs. James M. Casey, of Cambridge, Mass.; Chief Daniel F. Sennott, Mrs. Sennott and Miss Katherine R. Sennott, of Boston; Chief and Mrs. William C. Shepard, of Pittsfield, Mass.; Chief and Mrs. John C. Moran, of Hartford, Conn.; Chief and Mrs. John M. Evans, of New Orleans, La.; Supt. Edward E. Williamson and Mrs. Williamson, of Boston; Harry Belknap, of FIRE ENGINEERING; Chief Michael McPhee, of Lawrence, Mass.; Chief Selden R. Allen, of Brookline, Mass.; Chief George L. Johnson, of Waltham, Mass.; George F. Cobb, of Boston; Chief Oliver T. Sanborn, of Portland, Me.; Chief Homer R. Marchant, of Gloucester, Mass.; Ex-Chief Frank L. Floyd and Capt. L. W. Carter, of Manchester, Mass.; Chief W. H. H. Atkins, of Marblehead, Mass.; Harry J. Lovell, of Boston; and Chief John W. O'Hearn, of Watertown, Mass.

After the close of the convention the New England delegation visited Baton Rouge, the capitol of Lousianna, as the guests of the mayor and fire department and were royally entertained. Ex-Chief Floyd, of Manchester, took a trip to Greenville, Texas, before returning north.

Franklin H. Wentworth, of Boston, secretary of the National Fire Protection Association, attended the convention, arriving in New Orleans in the red Packard car that brought the film of the motion picture "The Fire Brigade".

HARRY BELKNAP.

Pacific Coast Fire Chiefs' Convention

(*Continued from page* 1095)

Rubbish Collection and the Fire Loss

William Meinheit, acting secretary of the Berkeley, Cal., department gave an interesting talk on municipal garbage and rubbish collection and its relation to the reduction of the fire loss. First Lieut. Meinheit reviewed the old collection system and its faults which finally virtually forced the city into the business of collecting garbage and rubbish. Working closely with the fire department the system now keeps yards, alleyways and cellars clean of all kinds of rubbish. The fire department inspects and instructs and the garbage department does the collecting. As a result said Lieut. Meinheit, the loss from rubbish fires has practically disappeared from that city.

Fire Department First Aid Work

Chief Thomas R. Baird, who has in his department one of the best first aid teams on the coast, gave a review of the work of his department in this respect. He said that the men attend meetings regularly and are all trained. All of the chief officers, he said are now expert in the work.

Chief Baird illustrated his talk by two demonstrations given by one of the crews of the new high speed squad wagon which responds to all calls for rescue work.

Oil Fires, Garage and Dry Cleaning Hazards

Motion pictures and slides showing the recent huge oil fires at La Brea and San Luis Obispo, together with an explanatory lecture, was given the same evening by George Prussing, of the Union Oil Company. Other subjects under discussion during the same evening included garage hazards and dry cleaning hazards.

Hydraulics Treated by Chief Dodd

The paper on hydraulics by Chief Samuel Dodd of Los Angeles, in charge of the Los Angeles Fire College was also enthusiastically received and caused considerable discussion. The chief dwelt on the necessity, under present conditions in all cities and towns, of the chief and all his men in knowing something about hydraulics pointing out this need by citing instances where water pressure was not adequate to support the department or that ignorance of water conditions has caused heavier losses than necessary.

Papers were also presented and discussed on the subjects of fire alarms, civil service by E. E. Bullard, of Fresno, Shop problems and practices by E. T. Burtner, Master Mechanic of Fresno, Ed. G. Henry, Master Mechanic of Los Angeles. C. B. Jackson of Fresno spoke on the co-operation of water departments.

Discuss Volunteer Departments

One of the most important discussions occupied the most of Friday morning. This was on the subject of volunteer departments. Chief J. H. Carlisle of Vancouver started the meeting by speaking on the proper drilling of men from the paid department's viewpoint and was followed by Tom Graham of Corvallis who explained the question from the volunteer's standpoint. Charles Ferguson of El Centro discussed the personnel of a volunteer department and how to maintain interest and efficiency.

Another question which brought out considerable discussion was the responding to alarms outside of city limits. There was a diversity of opinion on this, influenced in each case by local conditions. Others who discussed volunteer departments were Chief Joe Schlanser of Mt. Vernon, Washington, Joe Wood of Renton, Mark Ryan of Redwood City, Cal. Chiefs Harmon of Fort Bragg, Cal., Coates of Tillamook and several others who participated in the discussion from the floor. The volunteer fire chief was roundly praised by Chief George Mantor, incoming president, who said that he had learned many things from volunteer chiefs. Commissioner Colbourn also spoke on the question saying that any community is "small potatoes if it will not protect its volunteer fire fighters with some form of insurance against injury and loss of clothing, etc.," when serving the interests of the community.

The Entertainment Features

The entertainment features also surpassed any previous meeting with the possible exception of Seattle. On October 11 the "Los Angeles Live Wires" composed of fire commissioners, members of fire departments and other friends of the Chiefs from Los Angeles, put on a dance and entertainment program prior to the opening of the convention the next morning. The music was furnished by the Los Angeles Department orchestra. Two other bands, from Oakland and Pasadena, lent color to the convention, while the Fresno Fire Department orchestra entertained the ladies during their trips about the country and their little auxiliary meetings. Delegates from the north were entertained en route by the various communities they reached and with a great civic luncheon at Modesto as the guest of Mayor Sol P. Elias. Representatives of the various service clubs, city departments and the Chamber of Commerce were in attendance. Delegates from the south traveling by motor caravan, led by two huge buses suitably decorated were treated at Bakersfield by Chief Van Meter and his city officials to a luncheon and entertainment.

Other entertainment was in the form of an informal ceremonial staged by the "Royal Order of Snapping Turtles" a fraternal organization of chiefs inspired by the Oregon delegation.

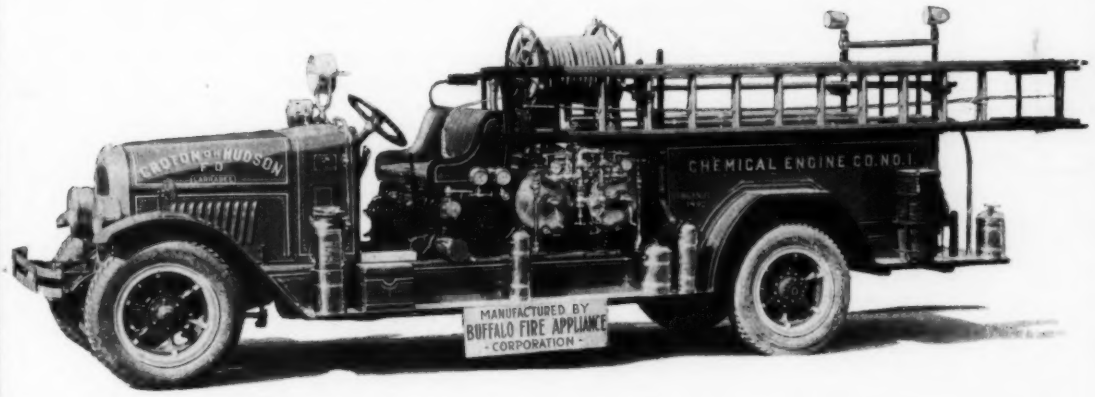
The 1927 convention will be held in Portland, Oregon, in the event the International Association also meets there. If not the Coast association will meet in Vancouver.

Resolutions Passed

Resolutions were passed by the convention approving Uniform Building Code, as drafted by the Pacific Coast Building Officials' Conference, urging the adoption by the U. S. Government of a policy of prevention of forest fires and the appropriating of the necessary funds by Congress to permit the carrying on of adequate precautionary measures essential to prevent such fires; that the efforts towards standardization of hose couplings be continued; pledging active support to moving picture, "The Fire Brigade;" urging adoption of rules and regulations in every city and town compelling the installation of an approved style of fire escape to properly provide an egress for afflicted persons in the event of fire; against hazardous places of assembly, such as tents, etc.

The New York State Delegation to the I. A. F. C. Convention.

BUFFALO



Buffalo "Built-to-Order" Apparatus is Ideal for Small Towns and Suburban Communities

The apparatus pictured above is a typical Buffalo job. Triple Combination Pumper equipment mounted on a Larrabee chassis. Pump guaranteed to deliver 350 gal. per min. at 120 lbs. pressure. Two 40 gal. chemical tanks and 1000 ft. hose body.

CROTON-ON-HUDSON is only one of many suburban communities that have purchased Buffalo apparatus. Small towns, suburban and rural communities everywhere are rapidly turning to us for apparatus because we specialize in just the type of equipment they need.

We build-to-order dependable, moderate-cost apparatus that will exactly meet the requirements of the town or community making the purchase. Our experienced fire apparatus engineers work right with the local fire officials in making plans for the new apparatus. The apparatus is then built of the finest materials available according to these plans by trained workmen in our large and thoroughly up-to-date plant.

This method is proving so successful that Buffalo apparatus is making-good wherever placed in service, our business increases steadily and fire officials, of their own accord, are constantly writing us glowing letters of praise of their Buffalo equipment in service.

Regardless of whether or not you are considering new apparatus at this time, we would like you to know all about the Buffalo method of doing business and about modern built-to-order fully-guaranteed Buffalo apparatus.

May We Send You Complete Information?

BUFFALO FIRE APPLIANCE CORP.

Main Office and Factory, Buffalo, N. Y.

BUFFALO

Q. What is ANALOX?

A. A Paint.

Q. How does it differ from other paints?

A. It is more durable. It costs less. It is more economical to apply. It dries more quickly.

Q. Is it anything more than a paint?

A. Yes. It is a fire retardant.

Q. What is the "ANALOX PROCESS"?

A. A process for protecting wood shingle roofs against fire brands.

Q. How effective is it?

A. Tested by the Engineering Laboratory of Columbia University the roof treated with the "ANALOX PROCESS" withstood successfully the famous "burning brand test" which is used by the Laboratory of the National Board of Fire Underwriters.

Q. What is the bearing of this on fire hazards in American Cities?

A. Wood shingle roofs impose a terrifying "conflagration hazard" on practically all our large cities. The existing risk from wood shingles can be done away with at relatively small cost by the "ANALOX PROCESS".

Q. How should the matter be handled in your city?

A. A local contracting company should be formed to apply the "ANALOX PROCESS" under license from us. This process should be made compulsory for all wood shingle roofs in congested districts.

For particulars write to:

THE ANALOX PAINT and COLOR CORP.

83 Chambers Street New York City

WHY SIRACODE IS THE SEARCHLIGHT OF SOUND!

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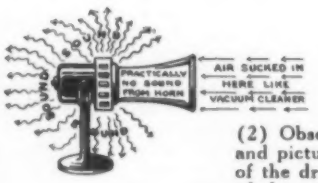
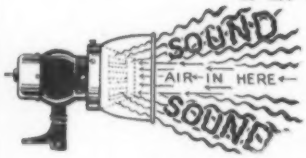
A Siren is Pictured Here



(1) Note that the so called "Horn" merely serves as an intake for air, emitting practically no sound! For this reason many manufacturers omit it completely on certain models. As a matter of fact it is more of a detriment than an asset.

(2) Observe how the sound is ejected through a number of port holes in all directions, and picture, if you can, what a large percentage of it is forced **backward** into the ears of the driver, and over the road already travelled, this increasing **greatly** with the speed of the vehicle! Do you wonder why they don't clear the way ahead?

Now Study The Construction of a Siracode



(1) Note that the rotor and stator are **Parabolic, causing the sound waves to be forcefully projected forward in the line of travel where they are wanted and needed.**

(2) Observe the scientifically shaped, and correctly proportioned deflector, which also **greatly intensifies the sound.**

(3) The specially constructed motors used for **SIRACODE** consume about **one third** the amperage of a siren of similar volume, **in short.**

SIREN=

LAMP POST

SIRACODE

SEARCHLIGHT

So Why Put a Lamp Post on Your Car?

SIRACODE SIGNAL CORPORATION

Formerly Heath Engineering Laboratories, 354 Pine St., San Francisco, Calif.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

SUCCESSFUL SALVAGE WORK BY VOLUNTEERS AT MT. VERNON

Description of Work Carried on by Part Paid and Part Volunteer Fire Department—Salvage Company Necessary

By JOHN GIBSON, Chief of Fire Department, Mt. Vernon, N. Y.

THE Fire Chief of every Fire Department is always working and striving to keep his Department at the highest point of efficiency, he is always on the alert for apparatus and equipment that will aid in the saving of life and property and he must have the best.

Another important branch of the service is fire prevention, which every Chief of this Association is very much interested in and where practiced it has been a large factor in keeping down the annual fire losses.

Another branch of the service, and one that has been overlooked and neglected in several Departments is salvage work. It is the general opinion that the insurance companies should equip and maintain a salvage corp within your city, but the writer firmly believes that the best results can be obtained by having the work done by the members of your own Department. There are several reasons, and to my mind the principle one is, that all men are subject to the same regulations and under the same discipline, thereby eliminating any friction from the outside. Fire fighting at the best involves enough uncertainties without having independent organizations within our ranks to create and encourage difficult situations.

The Fire Department of the City of Mount Vernon, of which I have the honor of being Chief, is part paid and volunteer, there are nine companies, thirty-five paid men and about 460 volunteers. One company is maintained and equipped for salvage work, this company also does police work at fires when necessary. The work done by this salvage company has proven invaluable on many occasions, for the saving of contents is just as important as the extinguishing of fire. This company covers all contents and clears the building of all persons except firemen, also a man is detailed at all entrances to the building involved. Before this order was placed in effect, there were always complaints about the loss of money and other valuables, but this has been entirely removed.

The covers used in this Department are water-proofed, size about 12′ x 18′ and are very easy to handle.

The City of Mount Vernon has a population of about 53,000, is 4¼ miles square, with an assessed valuation of $119,157,062. The amount of property and contents involved by fire for the year 1925 was $3,539,900 — total loss by fire on property and contents was $62,392, and one of the reasons for this low loss was effective organized salvage work.

Some cities or villages may take exception to organizing or maintaining a salvage company, but I would advise that this work be done, as in Mount Vernon, entirely by volunteer members of the Department.

Effective Fire Prevention Measures

The office of the fire marshal of South Dakota, has received frequent requests for material to be used in fire prevention campaigns. In the opinion of the fire marshal, the most effective means is the use of information cards that are posted conspicuously in public places. A number of the towns have adopted this method of informing the public of the regulations governing the fire department, of the most common causes of fire, and some of the methods to be used.

The cards on which this data is printed should be of adequate size to contain the information in readable size type. A red card should be used or a white card with the message printed in red. The telephone number of the volunteer department should be printed in large type at the top of the card, and the number should be made common and well known to everybody in town including the school children.

Following this the ward signals should be given and the wards designated. Many valuable suggestions could be printed and in this way not only efficiency in giving a fire alarm would be effected but it would bring carelessness squarely before the public and no doubt would reduce at least a part of the careless fires. People read such literature and especially the children and younger generation. It is interesting to them and educational for all.

The following is a sample of what should be printed on the cards:

To turn in a fire alarm Call No....., give your name and location of fire.

All firemen will report to fire station when hearing the alarm.

No one will be permitted to ring Central when fire alarm is being given except active firemen, their wives and fire officials, except in emergencies such as sickness or accident.

The city is divided into four wards, first ward being the northeast part of town which is indicated by one blast. The second ward the northwest part indicated by two blasts and repeat. The third ward the southeast part indicated by three blasts. The fourth ward the southwest, indicated by four blasts.

The fire alarm is a siren system and sufficient time must elapse to allow the sound to die down before ward signals can be indicated.

Do not drive in front of fire apparatus. When alarm is sounded pull to curb and remain there five minutes, or until all apparatus has gone past.

Do not drive over hose or park near a hydrant.

Do not park in front of a theater or any public place of amusement.

Keep out of the firemen's road. If your help is needed, you will be asked to assist.

See that your chimneys are in good condition and the brackets have not become loose and allowed the chimney to settle and leave an open place for sparks to get out.

See that metal stops are placed in unused openings in chimney before papering over same, or when not in use.

See that weeds and litter do not accumulate close to your buildings.

Empty ashes in the open and wet them down before dark. Keep them in metal containers when inside your home or place of business.

Use gasoline for what it is intended for and never in a closed building to clean fabrics.

Never use kerosene to start fires with unless poured from an open vessel and onto a flame. It is sure to form gas and cause an explosion, and is dangerous in any event.

Nyack Has Peculiar Oil Fire

Just after the crew of a yacht had finished fueling at a dock at the foot of Main street, Nyack, N. Y., fire broke out in the hold of the boat and at the same time, without any warning whatsoever, there was an explosion of gas.

The Nyack fire department responded, and after fighting the fire for about two hours during which time there were a number of flashes, the fire had apparently subsided. All the companies with the exception of Mazeppa No. 2 with the new 1,000-gallon Seagrave pumper were permitted to return. Chief Morgan discovered a leak in one of the fuel tanks and believed that by enlarging the hole and emptying the fuel it would be possible to eliminate the chances of fire breaking out again. A moment after this was done, he discovered a can containing some fuel, and he picked it up in order to prevent the suction of the pumper from becoming clogged. As he started up the companionway with the can, there was a flash and Chief Morgan was thrown clear of the deck.

The chief was caught by Chief Jones and rushed to the hospital; he died the following morning.

The exact cause of the original fire was not ascertained but a theory was established that perhaps it resulted from the batteries.

New System of Drills in Boston, Mass.—Fire Commissioner Eugene C. Hultman of Boston, Mass., has put into effect a new system of drills whereby every officer below the grade of district chief and every member of the department will be required to attend six sessions of the drill school each year. Drills are being held both morning and afternoon in the year at headquarters on Bristol street under the direction of Capt. Daniel W. Baker, drill master.

FIRE DEPARTMENT ACTIVITIES

Bardstown, Ky., to Have Paid Fire Department—A paid fire department of twelve members will be established at Bardstown, Ky.

Roselle, N. J., to Have New Station—The borough council of Roselle, N. J., have appropriated $90,000 for the construction of a fire station equipped with a fire alarm system.

Extra Firemen for Dover, N. J.—Extra firemen will be added to the department of Dover, N. J. from the first of the year.

Doylestown, Pa., Apparatus Passes Test—The new pumper of Doylestown, Pa., has successfully passed the Underwriters' test.

Massachusetts Fireman Fined for Accident—A fireman in Boston, Mass., was fined one day's pay for being responsible for the collision of the apparatus that he was driving with that of another company also responding to the same fire.

Hastings, N. Y., Fire Alarm Nearly Completed.—The installation of the Garl fire alarm system at Hastings, N. Y., is almost completed, and will be turned over to the city at an early date.

S. Williamsport, Pa., Awards Fire Alarm Contract.—South Williamsport, Pa., has awarded a contract for the installation of a new fire alarm system to the Garl Signal Company of Akron, Ohio.

Red Cross Instructs Hoboken, N. J., Firemen—The members of the Hoboken N. J., fire department were instructed in the art of first aid and life saving by a member of the American Red Cross.

Little Rock, Ark., Opens Station—The New fire station of Little Rock, Ark., was formally opened. A delegation of firemen inspected the new station while on their return trip from the state convention at Jonesboro.

San Bernardino, Cal., Wants More Men—Chief Leffen of San Bernardino, Cal., has filed a request for eight additional men for the fire department. At the present the department has twenty-two men to man four fire stations.

Jeanette, Pa., Chief Resigns—Chief James R. Carouthers of Jeanette, Pa., has resigned from his office. Thomas Milburn, a member of the department for many years has been appointed to the vacant post.

Martins Ferry, O., Receives Aerial Ladder—An Ahrens-Fox aerial ladder has been delivered to Martins Ferry, Ohio. The truck cost $16,500, and it is equipped with door openers, roof cutters, axes, wall breakers, and other sundry equipment.

E. Farmingdale, N. Y., Purchases Apparatus—The fire company recently organized in East Farmingdale, L. I., N. Y., has purchased a Republic truck on which is mounted a large chemical tank and other fire department equipment.

Many Hunt Firebug at Asbury, N. J., Fire—Urged on by the glory of receiving a reward for the arrest of a fire bug, hundreds crashed through the fire line at a fire in Asbury, N. J., bedecked with all sorts of badges. The fire that attracted the amateur sleuths resulted in a one dollar damage.

Old West New York Fire Engine Sold—The old steam fire engine of West New York, N. J., that was purchased twenty-two years ago at a cost of $4,000, was recently sold as junk for eighty dollars. Until the pumpers became popular, the steamer was the town's fire defense.

Sioux City, Ia., Stresses School Fire Drills—The School superintendent of Sioux City, Ia., has urged that all of the city schools have frequent fire drills. The fire chief, state fire marshal or any member of the board of education may call for fire drills at any time.

New Fire Station Planned for Jacksonville, Fla.—Plans are being made for the construction of a new fire station in South Jacksonville, Fla., and the cost for the building will be placed in the 1926-7 budget now being drafted. The station will house two companies, dormitory for the men, storage space, and rooms for the chief.

Ex-Assistant Chief of Ann Arbor, Dies—Eugene William, for fifteen years assistant fire chief of Ann Arbor, Mich., and for thirty-one years a member of the fire department, died at his home at the age of fifty-five. When in active service, he had charge of the sixth ward station. He is survived by a widow, two daughters, a son, two brothers, and two sisters.

New Nebraska Organization Formed—At a meeting held in Wakefield, Neb., the Northeast Nebraska Firemen's Association was formed with Ernest Enke of Emerson, president. A banquet was held in the evening and some of the honored guests were State Fire Marshal Trouten, Edgar Howard, and John McGowan, president of the State Association.

Engine Crashed into Philadelphia Store—As a chemical truck was being backed up preparatory to being turned around to return to quarters, the reverse lever stuck, and the truck crashed into a store front in Philadelphia, Pa., injuring several who were in the store. The driver was badly cut by the glass but he refused treatment.

Kemmerer, Wyo., May Pay Firemen—The matter of giving some compensation to the volunteer firement of Kemmerer, Wyo., was brought up by the mayor at a meeting of the city council. On the other hand, the city attorney brought out the fact that the volunteer firemen are exempt from certain taxes, and if they received some money compensation, they would loose the privilege of exemption.

More Firemen for Minneapolis, Minn.—At the request of C. W. Ringer, chief engineer of the fire department at Minneapolis, Minn., seventy-seven will be added to the rolls of the department. With the addition of these men, Chief Ringer said that he would be able to release more men for fire inspection work, and some of the downtown companies would receive the very much needed added strength.

Lackawanna Railroad Tests Fire Alarm Device—The railroad officials of the Lackawanna railroad conducted a test of a fire alarm device that was installed on the pier by the Automatic Fire Alarm System of Nutley, N. J. It is operated on the principle that heat expands a certain element and makes contact for the transmittal of the fire alarm signals. Within a short time at the test, there were forty-one lines in readiness from the various tugs in the river and the land forces.

Lumber Association Plans Fire Waste Contests.—At the meeting of the National Fire Waste Council, plans were considered for holding a fire waste contest among the lumber interests. Each of the associations affiliated with the council shall, it is proposed, conduct a contest among its members in accordance with a scale of marking which considers the fire loss reductions, the structural and protective improvements, and the educational activities.

Philadelphia Golfer Establishes a One-Hole Record—Many have attempted to hole in one, but a golfer at Philadelphia, Pa., established a new record. When he struck the ball, out it sailed through the air, breaking the glass window of a fire alarm box, and rolling against the controlling lever. Several companies responded to the alarm but found no fire. The golfer apologized and said it was the longest shot of his career—if it had only gone straight.

Berlin Firemen Called to Rout Bees—When a swarm of bees hovered high up on the house fronts of Berlin, Germany, the fire department was called. The swarm was sprayed with a small stream, and this caused the bees to bunch together. A fireman on a ladder, held a cage-like box and captured the entire swarm. At the fire station a record is kept of all the people that have bee hives, and when a swarm is lost, and a catch is made, the various bee-owners are notified to come and claim their property.

Rockland County Firemen Meet in Nyack, N. Y.—It was estimated that there were more than 5,000 visitors at the convention of the Rockland County Firemen's Association that was held in Nyack, N. Y., on September 22. The fire alarm signal was turned off because of the constant trouble from false alarms, and there were no fires to mar the order of the convention. There was a parade and various prizes were awarded. Exhibitions were given in fire-fighting and there was a display of fireworks in the evening.

N. Y. City Opens Bids for Fire Stations—Bids were opened by Deputy Fire Commissioner Joseph M. Hanson of New York City for the construction of three fire stations in the Flatlands and Rugby sections of Brooklyn and in the Springfield section of Queens. The contract was awarded to the Wigian Building Company, the lowest bidder, who submitted a bid of $57,770. The stations are designed to accommodate a combination of one engine and one hook and ladder company each.

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FIRE EXTINGUISHERS
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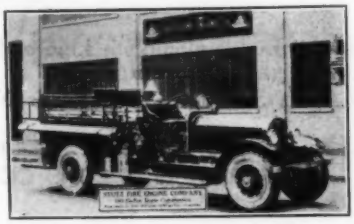
ELKHART, INDIANA

STUTZ



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6 pieces for Kansas City, Mo.
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Our new, economical method of sales, insures the Municipality of VALUE RECEIVED for every dollar expended.

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Fire officials find the powerful B & M fire apparatus Siren to be ideal to meet modern street traffic conditions. Electrically-driven Sirens cannot be operated successfully by storage batteries in hard and continuous service. Hand-rotated Sirens are both exhausting and dangerous to the operator. Therefore, the mechanically-driven B & M Siren with its piercing screech that can be heard for miles is the ideal fire apparatus Siren.

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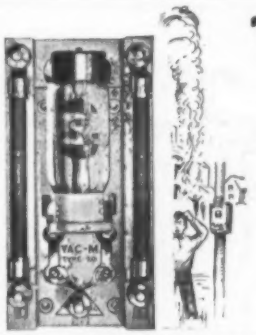

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You can insure the safety of your city and prevent possible great life and property fire losses if your system is equipped with VAC-M Arresters.

They protect your delicate alarm instruments against the dangers of lightning and short circuits so that you always get the alarm and your men and apparatus to the fire.

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Motor Fire Apparatus
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Established 1864
Clay Automatic Door Spring Devices for fire stations save valuable minutes in getting to fires. Write for details.

Asst. Chief G. L. HOWE, of the Ridgefield Park, New Jersey Fire Department, writes:
"Ship ten Dontfear Smoke and Fume Respirators to complete the dozen. We have two at present that your representative left here and have found them satisfactory."

Much Better Than We Expected is the verdict of those using the
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Send For Descriptive Catalogue
No Sponge. Price $5. With Airtight Goggles $5.60
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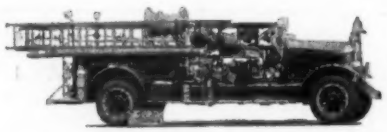

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The "Fyr-Foe" Twin Pumper
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The "Fyr-Foe Auto-Powered" Pumper makes use of the 15 brake horse-power in a Ford car or truck at a price within range of the smallest communities, providing adequate fire protection at a fraction of the cost of big apparatus.
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The STOUGHTON
Community Fire Fighter is Designed Especially for Small Towns
Fire apparatus for volunteer and small town fire departments must be designed, built and equipped to meet particular requirements. It must be a combination of several distinct types built for city use. It must be complete in every detail.
The Stoughton, the *Original Community Fire Fighter*, is designed to meet these requirements and made in three sizes,—300—350 and 500 gallon capacities. Each model and every piece of apparatus guaranteed to pass the National Board of Fire Underwriters' twelve-hour pumping tests.
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STOUGHTON FIRE APPARATUS CO., 250 W. 57th St., New York City, Eastern Representatives

PROPOSED IMPROVEMENTS

Marcus Hook, Delaware Co. Penn.—Marcus Hook Fire Company considering the purchase of a new ladder truck.

Nanty-Glo, Cambria Co., Penn.—City Council to purchase fire apparatus for the fire department.

Chelan, Chelan Co., Wash.—New fire department to be organized here and funds to be raised for the purchase of equipment.

Roseland, Essex Co., N. J.—Borough Council considering the improvement of the present fire apparatus.

Pike, Wyoming Co., N. Y.—Fire department to purchase a new fire engine and other small equipment.

Lake Mohegan (Mail Peekskill), Westchester Co., N. Y.—Mohegan Volunteer Fire Association having plans made for the construction of a new fire station.

Elizabeth City, Pasquotank Co., N. Car.—Fire alarm system to be replaced with modern equipment.

Devils Lake, Ramsey Co., N. Dak.—Contemplating the purchase of a pumper for the local fire department. Martin Olsen, City Auditor.

Youngstown, Mahoning Co., Ohio—City Fire Prevention Commission of the Chamber of Commerce considering the issuance of bonds for the purchase of additional fire equipment.

Ashland, Ashland Co., Ohio—Henry Schulz, Chief of Fire Department and B. F. Zercher, Mayor, advocate addffional fire equipment for the fire department.

Aledo, Mercer Co., Ill.—Farmers within close proximity of this city are considering the purchase of a fire engine at approximate cost of $2 880. This machine is to be kept in Aledo.

East Chicago, Lake Co., Ind.—C. G. Phillips, City Mechanic, recommends that the fire alarm system be rewired.

Topeka, Shawnee Co., Kan.—Election to be held to vote on a $200.000 bond issue for the erection of fire stations.

Rockaway, Morris Co., N. J.—Ordinance has been introduced in the Borough Council providing for a $11 500 bond issue for fire apparatus.

Patchogue, Suffolk Co., N. Y.—Alfred Lyman, Chief of Fire Department recommends the construction of a fire house on Park Street.

Minot, Ward Co., N. Dak.—At general election Nov. 2, a $16,000 bond issue will be voted upon for the purchase of an aerial ladder truck for the fire department. Geo. A. Reishus, City Auditor.

Toledo, Lucas Co., Ohio—Bids are being received for the construction of fire station to be known as Engine House No. 1.

Little Rock, Pulaski Co., Ark.—Fire department raising funds for the purchase of new uniforms.

Santa Maria, Santa Barbara Co., Cal.—City contemplating the purchase of a pumper for the fire department.

Newport Beach, Orange Co., Cal.—A bond issue of $75,000 is being recommended for a paid fire department and fire stations at Newport Beach, Balboa Island and Corona del Mar.

West Palm Beach, Palm Beach Co., Fla.—Ray Larrabee, Asst. Fire Chief during the installation of a fire alarm system in the city.

Hanna City, Peoria Co., Ill.—Plans under way for organization of fire department and purchase of fire fighting equipment.

North Adams, Hillsdale Co., Mich.—New chemical car to be purchased for the fire department.

West Paterson (Mail Paterson), Passaic Co., N. J.—Considering the installation of either a siren or fire alarm system.

Stuyvesant Falls, Columbia Co., N. Y.—Voted in favor of a $15,000 bond issue for erection of fire station, the purchase of apparatus and for the installation of fire cisterns.

Chester Heights (Mail Mt. Vernon) Westchester Co., N. Y.—Election to be held Nov. 2, to vote on a $7,000 bond issue for purchase of combination chemical and hose car for Union Corners Hose Company.

Lansdale, Montgomery Co., Penn.—Funds being raised for the purchase of a hook and ladder truck and equipment for the Fairmount Fire Company.

Luxemburg, Kewaunee Co., Wis.—Fire department inspecting various types of fire apparatus before motorizing their equipment. Charles L. Peters, Village President.

Cheyenne, Laramie Co., Wyo.—Funds being raised for purchase of new equipment for the fire department.

Reseda, Los Angeles Co., Calif.—Fire department organized in this town.

Glenville, Fairfield Co., Conn.—Glenville Fire Company raising funds to purchase fire apparatus. Cortland V. Reynolds, Chief of the department.

Birmingham, Oakland Co., Mich.—Considering the purchase of several hundred feet of fire hose for the fire department.

Tuckahoe, Westchester Co., N. Y.—Special election to be held November 2nd to vote on a $7,000 bond issue for the purchase of a chemical and hose car for the Union Corners Hose Company.

Sweetwater, Nolan Co., Texas.—New fire station being erected in south side of city. After central fire station is completed additional equipment will be purchased.

Deep River, Middlesex Co., Conn.—Committee appointed to investigate needs for additional fire protection.

Anita, Cass Co., Iowa.—Fire department to raise funds for badly needed additional equipment.

Beverly, Essex Co., Mass.—Aldermen voted in favor of the purchase of a $1,500 car for Chief Robert H. Grant of the fire department.

Bogota, Bergen Co., N. J.—George Grassing was recently elected Chief of the Fire Department here.

Bend, Deschutes Co., Oregon.—Fire department considering the purchase of a new pumper.

When
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for equipment or supplies make your wants known through Fire Engineering. More bidders mean more competition and better satisfaction.

CONVENTION DATES

Oct. 26-29—FIRE FIGHTERS' SHORT COURSE. Second Course, Iowa State College, Ames, Ia. Address, L. J. Murphy, Municipal Engineer, Engineering Extension Department, Iowa State College.

Nov. 10-11—MICHIGAN STATE FIRE CHIEFS' ASSOCIATION. First annual convention, Kalamazoo, Mich. Chief Charles H. Crampton, Bay City, president; Chief F. Ford, Highland Park, secretary.

Jan. 18-20, 1927—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION, 45th Annual Convention, Columbus, Neb. Secretary, H. A. Webbert, Kearney.

Aug. 14-16, 1927—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual convention, Elmira, N. Y. Frank A. Emden, secretary-treasurer, 1200 Lenox Ave., Utica, N. Y.

Sept. 7-8, 1927—MISSOURI STATE FIRE CHIEFS' ASSOCIATION. 5th Annual Convention, Kirksville, Mo. Secretary, District Chief J. T. Lynch, Kansas City, Mo.

Sept. 7-8, 1927—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 2d Annual Convention, Kirksville, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Statement of Ownership

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of FIRE ENGINEERING, published semi-monthly at Albany, New York, for October 1, 1926.

State of New York, County of New York, ss.:

Before me, a Notary Public in and for the state and county aforesaid, personally appeared I. H. Case, who, having been duly sworn according to law, deposes and says that he is the General Manager of FIRE ENGINEERING and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of Congress of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Case-Shepperd-Mann Publishing Corporation, 225 West 34th Street, New York City.

Editor—Robert H. Lockwood, 225 W. 34th Street, New York City.

Managing Editor—Fred Shepperd, 225 W. 34th Street. New York City.

General Manager—I. H. Case, 225 W. 34th Street, New York City.

2. That the owners are:

Case-Shepperd-Mann Publishing Corporation, 225 W. 34th Street, New York City.

I. H. Case, 225 W. 34th Street, New York City.

Fred Shepperd, 225 W. 34th Street, New York City.

K. M. Mann, 225 W. 34th Street, New York City.

C. B. Hayward, 225 W. 34th Street, New York City.

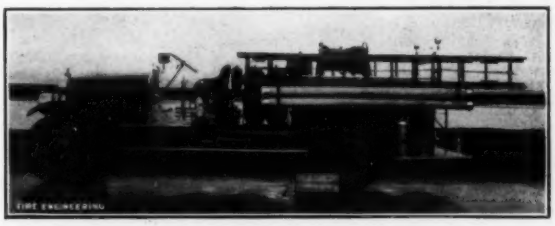
R. H. Lockwood, 225 W. 34th Street, New York City.

3. That the known bondholders, mortgagees, and other security holders, owning or holding 1 per cent, or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if you, contain, not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

I. H. CASE,
General Manager.

Sworn to and subscribed before me this 22d day of September, 1926.
(Seal) Henry B. Lockwood,
(My commission expires March 30, 1928.)



New line of Pirsch pumpers, made with 500, 600 and 750 gallon capacities. This car is also furnished by the makers equipped as a ladder truck, combination chemical and hose cars, squad cars, etc. Chemical, foam or booster tanks are also supplied.

Foamite-Childs Conducts Test at Mt. Vernon—A test of the foam generator of the Foamite-Childs Corporation was made at Mt. Vernon, N. Y., and many of the fire chiefs from nearby towns were invited to attend. A pit twenty feet in diameter was dug and filled with two hundred gallons of fuel oil, and twenty-five gallons of gasoline. After this had been ignited and had been burning for a short while, the flame was extinguished in fifty seconds by the steam from the foam generator. At this test, 175 pounds of foam powder was used to extinguish the blaze.

Ex-Chief Walsh on Active Service

Peter E. Walsh, formerly chief of the fire department at Boston, Mass., and who was retired on a pension in 1922 after many years of active service, has been appointed head of the fire prevention bureau. The new appointment carries with it a salary of $4,000 a year, and the appointment becomes effective at once. While Mr. Walsh holds his new position, the payment of his pension, awarded when he retired while chief of the fire department, will be temporarily suspended.

Supt. Peter E. Walsh
Boston, Mass.

The bureau of building survey and the inspection division as well as the license bureau will be combined with the new fire prevention bureau under the direction of Superintendent Walsh.

Boston to Re-Examine Men

The finance commission of Boston, Mass., has sent a request to Mayor Nichols asking that a re-examination be made of the firemen now enjoying the benefits of a pension. The commission claims that many of the men receiving a pension are now able bodied and holding down salaried positions.

The mayor asked the city council for an appropriation of $1,200 to pay for a medical examination of these men. The council refused to authorize the fund on the ground that as no provision exists for reinstating pensioned privates in the fire department, the ex-firemen would be left without pensions and also without a job in many cases.

W. Baker, drill master.

HARRY BELKNAP

Harold L. Miner of du Pont Promoted

After eleven years of service in charge of the fire protection work of the E. I. duPont de Nemours & Co., Harold L. Miner has been appointed manager of the Safety and Fire Protection division of the company succeeding Lewis A. DeBlois, who resigned. Mr. DeBlois becomes director of the safety engineering department of the Bureau of Casualty and Surety Underwriters.

Mr. Miner was formerly connected with the National Fire Protection Association in charge of the committee on special hazards and while on this committee he started the publication of the association's quarterly. Later he became assistant to the manager of the Fire Underwriters' Electrical Bureau of New York city and then became associated with the Underwriters Bureau of the Middle and Southern States.

Fire Marshals Hold Convention

(*Continued from page* 1111)

Franklin Wentworth secretary of the National Fire Protection Association, commented on the fine record of Memphis. He said that it was the most complete discussion of a city's progress in fire prevention that he had ever heard.

The problem of financial support from the government was introduced by Edward S. Gillenwaters, state fire marshal of Tennessee.

"The government of these United States spends millions of dollars in an endeavor to stop the sale of intoxicating liquors, with the object of conserving the lives of our people. Suppose the government should spend a like amount with the same determination to stop the fire waste. What would be the result?" asked Mr. Gillenwaters.

A "mulligan" dinner was arranged for the entertainment of the delegates, and while it was in progress at the fire house, two alarms were received—one calling for four companies at a kiln fire. The fire chiefs present quietly left the station and jumped into their cars that were parked in the alley nearby. None of the guests realized that a large fire was in progress.

At the election of officers, J. A. Tracy, state fire marshal of Des Moines, Ia., was elected president for 1927. He will succeed Chester E. Johnson who will become a member of the executive committee. W. A. Elstun, Kansas state fire marshal, was elected vice-president, and C. L. Topping of Charleston, W. Va., was chosen secretary-treasurer.

Stopping Trains at Fires Near Railroad Tracks

To successfully cope with fire in buildings situated near railroad tracks often necessitates occupying the tracks with hose lines and apparatus, and many sections of hose have been cut and apparatus damaged by the failure to stop passing trains in time to avert such damage. Men posted on the tracks each side of such a fire, with lanterns, robs the fire-fighting force just that much of its available personnel.

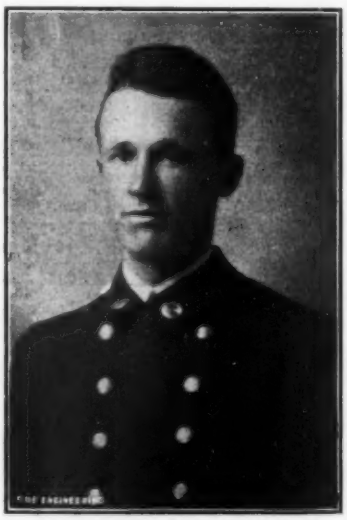
In times of emergency all railroads use railroad fusee signals which burn red for either five or ten minutes, to warn approaching trains and avoid loss of life and property. A new style of railroad danger signal for fire departments has recently been perfected by the Central Railway Signal Company, Needham Heights, Mass. It is essentially a double fusee signal, requires no matches for ignition and burns with a brilliant red light for twenty minutes. One of these emergency train stop signals is intended to be planted in each main line track, 1,000 feet both sides of the fire. The signals are packed twelve in a stout, waterproofed box, convenient for carrying on apparatus.

These signals can also be used for stopping street traffic in the event of sudden obstructions, such as a burst water main, and for all other purposes where a quickly available signal is required.

Holland, Now Chief of Raleigh, N. C.

W. E. Holland, who has been assistant chief of the fire department at Raleigh, N. C., for seven years has been recently appointed as head of the department.

He entered the fire service in that city as hoseman on February 14, 1913, and was assigned to Engine No. 3. He served as main hoseman under Chief Sherwood Brockwell until May 1, 1918, when Holland was advanced to lieutenant. This office he held until January 10, 1919, when he was appointed as captain of Engine No. 1. Mr. Brockwell held this post until he was advanced to the office of assistant chief on September 15, 1919.



Chief W. E. Holland,
Raleigh, N. C.

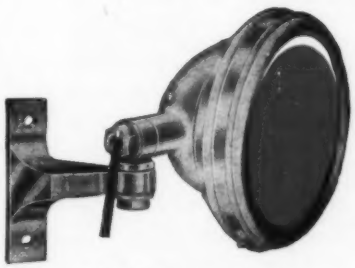
His last promotion came on September 1, and he is now chief of the fire department. Chief Holland has the record of thirteen years continuous service in the fire department and he is known locally as having been in charge of fighting the severe fire in the Almo Theatre in one of the main business blocks of the city.

Harlem, Mont., to Install Siren—A siren will be installed at Harlem, Mont. The council will pay into the treasury one dollar per hour for each man that is in attendance at a fire.

Some of the Peter Pirsch Sales Reported—Some of the recent sales made by the Peter Pirsch and Sons Company for fire apparatus include one for a Pirsch-Reo combination chemical and hose for North Hackensack, N. J., and one for a Pirsch-Ford hose car for Kings Park State Hospital at Kings Park, L. I., N. Y.

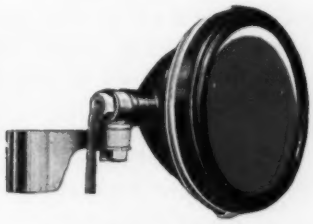
S & M Special Lighting Equipment

Red Safety-Lites, Head-Lites, Search-Lites, Pick-Up-Lites and Spot-Lites for Fire Apparatus, Police Cars and Ambulances.



No. 72 Red Safety-Lite. Reflector 5¾" diameter.

No. 90, 80 and 70 Spot-Lites. Reflectors 7½", 6½" and 5¾"

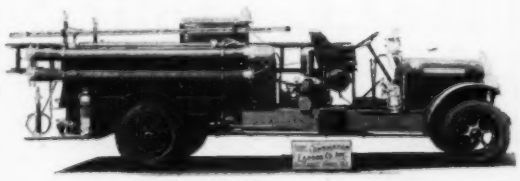


No. 90, 80 and 70 Red Safety-Lites. Reflectors 7½", 6½" and 5¾" diameter.

Use S & M Red Safety-Lites for your protection. They can easily be seen for several blocks and are used as a warning to pedestrians and all traffic in the direction of approach of Fire Apparatus, Police Cars and Ambulances. None of these departments should be without them. S & M Safety-Lites protect the Motorist, the Pedestrian and the Personnel of Police and Fire Departments

Write for descriptive catalog and prices

S & M LAMP CO. (Inc.) 118 W. 36th Street
Manufacturers of high grade lighting equipment Los Angeles, Calif.



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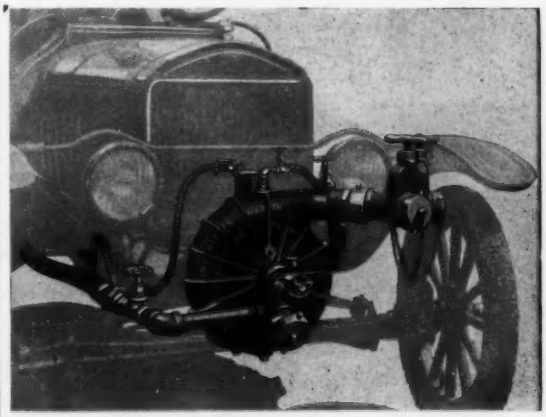
Continental Six cylinder motor, 100 gallon Booster Tank, 500 gallon Pump, 1200 ft. Hose Body, complete Miscellaneous equipment. Motor recently passed twelve hour Endurance test conducted by National Board of Underwriters. Built and equipped for service.

We offer 300, 350 and 500 gallon pumping units.

Write us when interested.

Combination Ladder Co., Inc.

381 Fountain Street Providence, R. I.



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At Low Cost

Here's the evidence—

VERMONTVILLE, Mich.

"Gentlemen:
We are writing to inform you we are very much pleased with our Barton Fire Pump mounted on Reo Fire Truck which was purchased from you a few weeks ago. We have attended four fires and paid for the apparatus more than three times over at our first fire.

Very truly yours,
VANCE F. BARBER,
Fire Chief."

Write for complete details.

AMERICAN STEAM PUMP CO.
Battle Creek, Michigan

SEWELL CUSHION WHEELS

For Safety and Economy

Sewell Cushion Wheels have proven the most practical form of resiliency for motor fire apparatus.

Over 170 cities are using Sewell Wheels and within the last few months the following cities have reordered from one to twenty sets which is ample proof as to the merits and economy in the use of Sewell Cushion Wheels

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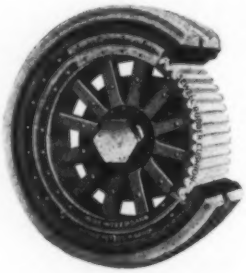
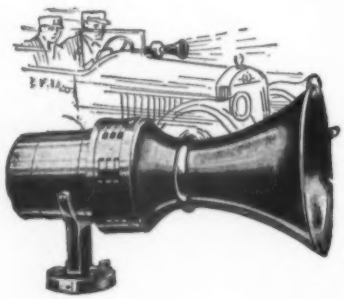
Highland Park, Mich.
Grosse Point, Mich.
Lansing, Michigan.
Boston, Mass.
Martenez, Calif.
El Paso, Texas.
Woonsocket, R. I.
Toledo, Ohio



Birmingham, Ala.
Seattle, Washington
Oakland, Calif.
San Francisco, Calif.
Charleston, S. C.
Monterey, Calif.
Augusta, Ga.
Milwaukee, Wisc.
Bridgeport, Conn.

Specify Sewell Cushion Wheels When Ordering Your Apparatus

SEWELL CUSHION WHEEL CO. **Detroit, Michigan**



The Sterling No. 12

This is the powerful electrical Siren used by leading fire Chiefs. It is ideal for all fire apparatus and other vehicles requiring a commanding signal.

We will send you a Sterling No. 12 complete with 10 feet of dual cable, for free examination and trial. You may return it if not fully satisfied.

Price complete.....$40.00

Sterling Siren Fire Alarm Co., Inc.
61 Allen St. **Rochester, N. Y.**

HALE PUMPS

IF you have a job which is uncomfortably close, try a Hale pump. Hale Dreadnaught Pump efficiency is enough higher than other pumps to create leeway where no leeway exists.

HALE FIRE PUMP CO.
Conshohocken, Pa.

Beat the Fire to it with an ERICK ELECTRIC SIREN

30 Days Free Trial

For Volunteer Fire Departments in towns of from 300 to 5,000 population, there isn't a Siren or a system in the world to equal the Erick. Night and day—year in and year out—it offers best protection to lives and property. The Erick is the only Siren using one big whistle on a powerful 3 and 5 h. p. motor which throws its sound evenly in all directions—louder and more penetratingly than all others. Write for full information and details of liberal 30 Day Free Trial Offer.

Erick Electric Siren Co., Inc.
95 S. Wabasha St., St. Paul, Minn.

FALSE ALARMS

"Parents try to do their best maybe, but I wish they knew how important it is to wake up a boy if there's a dandy fire downtown at night."

—*Brooklyn Daily Eagle*

A USE FOR THE FOAM

The settee in front of the fire station was vacant for a number of days—in fact for several weeks. The usual occupants of the honored seats were gifted with the keen instinct of being able to locate some of the forbidden liquor. Eventually the "boys" came back to their seats of honor and the firemen were curious to know what was the incentive for the return after the long period of absence.

The solution of the puzzle leaked out one day, when one of the perpetual guests called a fireman aside and asked him, "When is it to arrive?"

"What will arrive?" asked the fireman perplexed.

"Why, the foam apparatus that the chief said would be installed here soon."

—A. B. WHITE

THE ONE TO BLAME

The drill at the fire station had not come up to the standard of those in the past, and the officer in charge was very much excited because of it. It had been the custom if the drills went through satisfactory for the men to get off an hour earlier in the afternoon.

In a burst of anger the officer bellowed, "Not a man in this company will be given liberty this afternoon."

"Give me liberty or give me death," said one of the bolder ones in the rear.

Quick as a flash the officer roared, "Who said that?"

The same voice in the rear answered, "Patrick Henry."

THE TENDER SUBJECT

"The chief shoots a good game of golf."

"Yes. Always under eighty and he never mentions it."

"Why, he even held a royal flush once, and but for the others in the game, I would have never heard of it."

"Yes, and down at the Center street fire when all the papers came out with the headlines about the rescues he made, and the good work he did, you couldn't get a line out of him."

"This morning though, he had me cornered for about an hour telling some of the cute things that his youngster said and did."

SIREN MISTAKEN FOR ANIMAL'S CRY

The wail of a siren in McDonald, Ohio, was mistaken by the residents of a neighboring town for the sound of triumph of one of the wild animals believed to have escaped from a street carnival. Again, the following day, when the siren was sounded, a cow broke loose from her moorings, and tales went around that a cow had gone mad in the center of the business section.

The firemen of McDonald, Ohio, were blissful in their ignorance of the excitement caused by the trial of their new siren which they had just installed.

ETIQUETTE COUNTS

The following incident which is told of Watertown, Mass., shows how the people of the town believe in following and practicing all the nice rules established by etiquette.

A resident of the town who was seated by the fireplace about a nice open fire and enjoying his paper, was disturbed by a steady ring of the door bell. The gentleman upon opening the door saw a man greatly excited who, even before he was asked his business, explained that he did not know the family across the street and he was in doubt of what to do as he would like to tell them that their roof is on fire. He was afraid that they would be offended if he told them the fact.

A JUST REWARD

The captain came out from his office and observed the number of firemen loitering about the front of the fire station and watching the passing parade of pedestrians.

"Say boys' which one of you claims to be the strongest?" he asked.

Several straightened up but one named Bosco shouldered his way to the front.

"What makes you think that you are the strongest?" inquired the captain.

"I'll go ten rounds with any two of them together," boasted Bosco.

"You're the strongest, all right," replied the captain. "There is a pile of wet hose in the back of the station that is waiting to be hoisted in the drying tower, and I guess that you can do it."

HE WAS HIGH ENOUGH

An old darky ambled to the rear of the station where the drill tower was located and observed the men receiving practice in the operation of a sixty-five foot aerial ladder.

"How would you like to be on top of that ladder, Sam?" asked one of the firemen of the colored spectator.

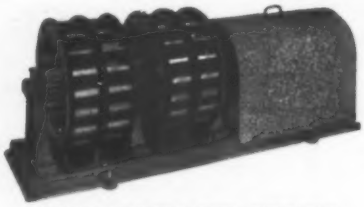
"No sah! Ah stays on terrah firmah, and the more firmah, the less terrah."

All for the Want of the Hose

The siren shrieked. Over in Central Islip it shrieked the alarm that there was a fire in the Brentwood Country Club four miles distant. What is that to the ever-ready fire lads. Soon, enough of the laddies had gathered to man the apparatus—with a shout, the apparatus was on its errand of mercy. By the time the firemen arrived, the club was in a mass of flame. What more could a fireman want? Was not here a man's size job, and did they not volunteer for such duty? The hydrant was but two hundred feet from the building—what more could they want.

One of the firemen in hauling the hose out was surprised at the ease with which it responded to his tugs. He pulled—all the hose that was in the truck came out—just two lengths. A search of both trucks revealed that all the hose must be at the fire station. The small hose on the hose reel of Brentwood was brought on the job but could not be used effectively. A truck was dispatched to Central Islip for the hose, and by the time it returned the pumper had almost emptied the 10,000 gallon reservoir in trying to squirt the water on the fire through the 100-foot hose line.

Hurrah! The boys had returned with the hose. The foundation was saved.



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For Every Kind of Fire

"CHILDS" MOTOR FIRE APPARATUS

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MORSE

FIRE BOAT EQUIPMENT

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

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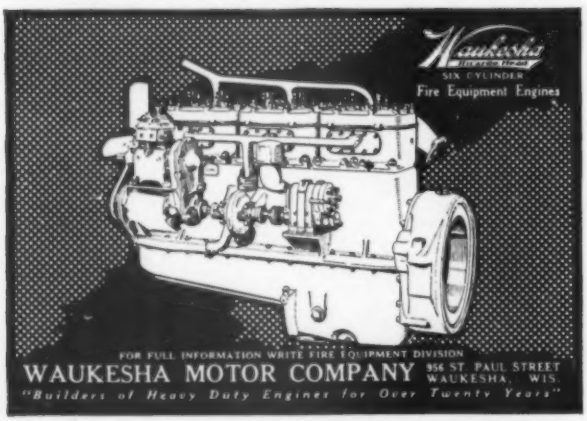

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WAUKESHA MOTOR COMPANY 356 ST. PAUL STREET WAUKESHA, WIS.
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FIRE HYDRANTS

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INCORPORATED
St. Paul, Minnesota

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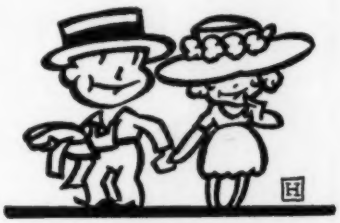

Whenever you are in the market for new equipment you naturally want to get complete information from all reliable manufacturers before you place the orders for your department.

This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service. Help yourself.

Here's Your List of Fire Protection Equipment and Supplies

1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal.
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
23 Caps, Firemens.
24 Chains, Non-Skid, Fire Apparatus.
25 Chassis for Fire Apparatus.
26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers, Fire, Powder.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
40 Fire Drills & Organizations.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.
55 Hose Clamps.
56 Hose, Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods.
70 Packings, Pump.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor.
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
76 Pumps, Fire Apparatus.
77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
79 Record Books, Fire.
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86 Sirens, Apparatus & Chiefs Cars.
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95 Starters, Fire Apparatus, Automatic, Air.
96 Steam Fire Engines.
97 Tarpaulins & Fire Blankets.
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101 Tractors.
102 Traffic Clearing, Systems.
103 Triple Combination Pumping Cars.
104 Uniforms.
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106 Wheels, Cushion.
107 Whistles, Fire Alarm, Compressed Air
108 Whistles, Fire Alarm, Steam.
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110 Wrecking Trucks.

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Nos. .....

Nos. .....

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Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

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Full Line Fire Dept. Supplies and Equipment.

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230 West Randolph St., Chicago, Ill.

If you continue to purchase Bi-Lateral Fire Hose for your department you can soon cut your hose expense to less than half of what you have been paying for the old construction. If you question this statement let us cite you to cities using our product exclusively that frankly tell us they are not spending half for fire hose that they were compelled to spend in the previous ten years.

There is a reason for this and we would like to show you why this is true.

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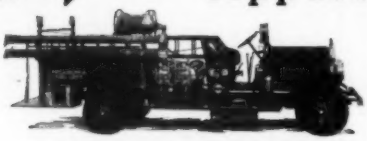

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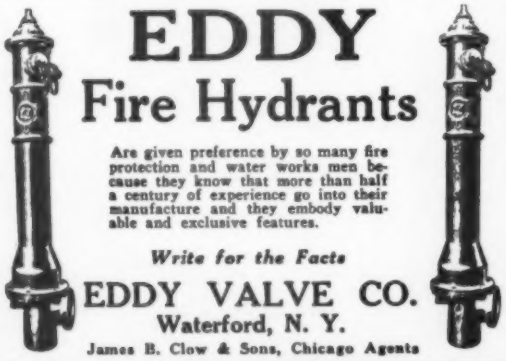

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Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.

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All operating threads are above the stuffing box.

No toggles, small screws or other small, quick-wearing parts.

All moving parts are bronze or bronze bushed.

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